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RELATION OF STREPTOCOCCI TO THE SPINAL FLUID IN EXPERIMENTAL POLIOMYELITIS *

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NEW YORK

Rosenow and his collaborators and others [1] have insisted on the identity of streptococci with the filtrable virus of poliomyelitis, a view that has not been generally accepted. For example, Bull [2] expressed the opinion that the bacteria are secondary invaders in the disease, and Smillie [3] and Amoss [4] viewed the cocci as being agonal invaders.

Recently Long, Olitsky and Stewart [1] showed that there may be still another source of the streptococci; namely, the air of the place in which the cultures are made. Furthermore, their experiments revealed that cultures of other organisms, such as staphylococci, diphtheroids, spore-bearing rods, and other miscellaneous, familiar micro-organisms, can be obtained frequently from the ground up brains of monkeys with poliomyelitis, the source of these being also the air. Certain biologic tests were reported which demonstrate the wide variation of the effects of streptococci from those of the true filtrable virus of poliomyelitis.[5]

Shortly after the publication of the latter article, a paper by Rosenow [6] appeared in THE JOURNAL in which he stated that streptococci were obtained from the spinal fluid of five patients during life, of two patients after death, and of each of three monkeys in which typical poliomyelitis followed intracerebral inoculation of virus from three fatal human cases. Rosenow states further: "The freshly isolated strains of streptococci, like those obtained in previous epidemics, produce in rabbits flaccid paralysis and other symptoms which I have come to regard as more or less characteristic of poliomyelitis in these animals."

We had not made cultures of spinal fluids because such material is, as a rule, free from virus, as we shall show immediately. In view of Rosenow's recent observations, however, an obvious discrepancy was apparent between his results and the prior conclusions obtained in this laboratory. We therefore undertook anew a study of the relationship of streptococci to the virus of poliomyelitis. This study concerned especially the cultivation of the spinal fluids of poliomyelitic monkeys according to the methods used by Rosenow.

METHODS

The following method of preparation of the selective yeast medium employed by Dr. Rosenow [6] was kindly supplied at our request:

> Routinely, we prepare an emulsion of this (Fleischmann's) yeast by adding 500 cc. of distilled water to one-half pound of yeast. The suspensions made from different samples which we have worked with have all been acid to litmus. This acid suspension or emulsion is then autoclaved at 17 pounds pressure for twenty minutes, in 8 ounce bottles about 5 cm. in diameter, which fit the cups in our centrifuge. After sterilization the mixture is thoroughly centrifugated and the supernatant opalescent and cloudy material is decanted in a sterile manner and then rendered slightly alkaline to litmus, with a 40 per cent solution of sodium hydroxide. This is then used as the culture medium in varying amounts and in varying dilutions. It is difficult to say precisely what dilution is best to use, for the results are so irregular; but we have obtained growth most constantly when the undiluted extract is distributed in small amounts of 2 cc. in ordinary sized test tubes, to which varying amounts of the spinal fluid are added. In some instances growth has occurred when one part of this extract is added to 9 parts of the spinal fluid itself.

Dr. Rosenow also stated that:

> The centrifugated extract often contains a few gram-positive streptococci which must be differentiated from the growth obtained from the spinal fluid.

and further that:

> In the instances where we succeed in growing the streptococcus in subculture from the primary growth in the yeast medium inoculated with the spinal fluid of cases of poliomyelitis, there is, of course, no question as to the source of the streptococcus. In those instances in which we fail to obtain growth in subculture, differentiation is made between the small number of streptococci found in the autoclaved yeast extract and those which we believe represent growth from the spinal fluid, by the increased cloudiness of the inoculated tube as compared with the control tube of the uninoculated extract of the same batch and in like amount, and incubated side by side; by the presence of a large number of organisms in smears of the inoculated medium, as compared with incubated control tube, and by differences in morphology and staining reaction. The streptococci that occur in the yeast extract are smaller, more slender, more uniform in size, less gram-positive, and the margin is less distinct than the streptococci which we feel represent a primary growth.

* From the Laboratories of the Rockefeller Institute for Medical Research.

1. References are given by Long, P. H.; Olitsky, P. K., and Stewart, F. W.: The Rôle of Streptococci in Experimental Poliomyelitis of the Monkey, J. Exper. Med. **48**: 431 (Sept.) 1928.
2. Bull, C. G.: The Pathologic Effects of Streptococci from Cases of Poliomyelitis and Other Sources, J. Exper. Med. **25**: 557 (April) 1917.
3. Smillie, W. G.: Cultivation Experiments on the Globoid Bodies of Poliomyelitis, J. Exper. Med. **27**: 319 (March) 1918.
4. Amoss, H. L., in Rivers, T. M.: Filtrable Viruses, Baltimore, Williams & Wilkins Company, 1928, p. 173.
5. Additional recent tests on the distinctive properties of streptococci and the virus of poliomyelitis are given by Long, P. H., and Olitsky, P. K.: Comparison of the Resistance of Streptococci and of Poliomyelitic Virus in Glycerol, Proc. Soc. Exper. Biol. & Med. **26**: 337 (Jan.) 1929. Similar experiments on the source of streptococci in another virus, that of herpes virus encephalitis, are described by Olitsky, P. K., and Long, P. H.: The Relation of Streptococci to Herpes Virus Encephalitis, J. Exper. Med. **48**: 199 (Aug.) 1928.
6. Rosenow, E. C.: Streptococci in the Spinal Fluid in Acute Epidemic Poliomyelitis, J. A. M. A. **91**: 1594 (Nov. 24) 1928.

STAINED-FILM PREPARATIONS AND CULTURES

With these instructions kindly supplied by Dr. Rosenow and with the directions in his paper [6] as bases for procedure, we made twenty-four examinations of "smear" or stained-film preparations of the spinal fluids of nineteen monkeys suffering from experimental poliomyelitis. In five instances the spinal fluids of the same monkeys were studied during early and late periods of infection. In addition, twenty-two cultivation tests were made with these fluids from seventeen of the monkeys, the test being repeated in the early and late stages of the characteristic disease in five.

Stained-Film Preparation. — From gram-stained preparations of the sediment of the twenty-four centrifugated spinal fluids, no definite evidence of streptococci was detected. In two instances, single diplococcoid bodies were seen, but in view of the fact that a similar picture was obtained from the materials of the gram stain alone and also that the fluids were sterile by culture, the bodies could be considered only as artefacts.

Cultivation Tests.—Twelve cultures were made in a series of long tubes of ascitic broth, in ascites-tissue fluid, and on blood agar—material also employed by Rosenow [6] for cultivation of streptococci from poliomyelitis. Ten tests were made in the yeast medium already described. Each series of the ten comprised from three to four tubes. As a rule, 2 cc. of the yeast medium was inoculated with different amounts of spinal fluid, and in two instances nine parts of spinal fluid were added to one of the yeast medium, a procedure sometimes followed by Rosenow. Because the yeast medium was opaque to start with, it was thought that both inoculated and uninoculated tubes might fail to reveal by visual inspection a sparse growth of bacteria. Hence the material from all the tubes was examined microscopically by means of stained films after twenty-four hours' and fourteen days' incubation.[1] Transfers were then made to broth and to rabbit blood dextrose-agar plates.

The results of the cultivation tests were as follows:

In mediums other than the yeast, there was no evidence of visible growth of bacteria. In the series of cultures with yeast medium, however, another picture was seen. The yeast itself contained, as foretold by Rosenow, a number of streptococci, revealed by an examination of gram-stained film preparations. The process of autoclaving was evidently sufficient to kill these bacteria, for repeated transfers of the yeast medium to other mediums favorable to the growth of streptococci failed to yield any living micro-organisms. The dead streptococci were in the form of diplococci and of chains, the individual cocci being small and lanceolate. In fresh yeast "extract" they were gram-positive, but after the medium was kept for fourteen days in the cold, the micro-organisms became fewer in number and showed several gram-negative forms. After sixteen days the streptococci had disappeared from the medium, probably as a result of autolysis. Precisely similar conditions were noted in the cultures of spinal fluids in this medium. Streptococci could be seen matching exactly those in the yeast extract itself, in respect both to numbers and to morphology. These showed the same deree of degeneration, corresponding to that of the bacteria in the yeast medium used in the particular culture. When an older medium was employed, that is, one in which the bacteria had completely disappeared, then the spinal fluid cultures were also free from organisms in gram-stained film preparation. Moreover, no growth was obtained after the inoculated or the control, uninoculated yeast medium was subplanted to broth or to blood agar.

CHARACTERISTICS OF ROSENOW'S STRAIN OF STREPTOCOCCUS

The next step in this study concerned the characteristics of the streptococcus obtained from spinal fluids in cases of poliomyelitis. In view of our failure to isolate this micro-organism from the spinal fluids of the poliomyelitic monkeys which we have studied, we requested a culture of Dr. Rosenow. He kindly sent us a culture derived from the spinal fluid of a patient with poliomyelitis, with the reservation that the streptococcus may have lost its specific infecting power and immunologic properties. The following studies were carried out with this culture:

Cultural Characteristics.—The streptococcus grew in solid medium in the form of diplococci or short chains, but in fluid medium the lanceolate cocci became somewhat more evenly rounded and appeared in much longer chains. In plain or dextrose broth there was a diffuse clouding of the medium with a heavy, whitish, precipitated sediment. On blood agar the colonies were round, small and greenish and were surrounded by a very narrow zone of cleared medium. The cocci grew profusely in ordinary peptone water containing different carbohydrates. In such mediums, acid was formed with dextrose, maltose, lactose, saccharose and salicin, but no acid was noted with raffinose or mannitol. With inulin there was shown either no acid or at times a slight degree of acidity.

In all these respects the streptococcus corresponded closely with a streptococcus obtained from the brain of a normal monkey and with another derived from the air of the laboratory, which have already been described.[1]

Rabbit Inoculation.—In earlier papers, a series of intracerebral injections of rabbits with streptococci derived from poliomyelitis and other sources was reported.[7] The present Rosenow spinal fluid strain acted in a similar manner to the other streptococci, as the following protocol shows:

Two rabbits were inoculated [8] intracerebrally with 0.4 cc. of a broth culture of Rosenow's spinal fluid streptococcus strain. One was found dead after twenty hours; the other, at this time, was moribund. The latter animal showed generalized spasmodic, muscular movements, with spasmodic head movements. The eyes rolled upward and the animal was on its side in a state of opisthotonos. Frequent spastic muscular contractions of the limbs were noted. This animal was killed by etherization. Stained-film preparations of the brains of both rabbits revealed numerous polymorphonuclear cells and a few streptococci. Cultures of the brain and of the heart's blood of both yielded pure cultures of streptococci. Microscopic examination of the two rabbits showed the purulent type of meningo-encephalitis, often associated with streptococcic septicemia. It is needless to repeat in detail the microscopic observations, for they have already been given.[7] No difference was detected in the effects of the Rosenow spinal fluid streptococcus in the rabbit and the effects of strains obtained from the air, from poliomyelitic and nonpoliomyelitic tissues, from medium, or from ground normal or herpes virus-infected brain.[7]

Contrary to Rosenow's finding, the rabbit is considered by other investigators as resistant to poliomyelitic infection.[9] Thus, in our experience, the following massive doses of fresh and filtered virus failed to infect rabbits: 20 cc. of a Berkefeld V filtrate of a 5 per cent suspension of active monkey brain injected intravenously, plus 0.5 cc. of a 50 per cent emulsion of the same brain injected intracerebrally in both hemispheres, plus 20 cc. of a 40 per cent emulsion injected intraperitoneally, plus 6 cc. of a 40 per cent emulsion injected intraspinally (cervical region), plus cotton

7. Long, Olitsky and Stewart (footnote 1). Long and Olitsky (footnote 5). Olitsky and Long (footnote 5).
8. All operative procedures were done under full ether anesthesia.
9. Flexner, Simon; and Lewis, P. A.: Epidemic Poliomyelitis in Monkeys: The Activity of the Virus, J. A. M. A. 54: 45 (Jan. 1) 1910.

plugs soaked in 50 per cent emulsion and packed into both nostrils. The monkey responds to this virus when inoculated with far smaller doses.

INOCULATION OF MONKEYS

A study was then undertaken to determine the effects of Rosenow's spinal fluid strain of streptococci in normal monkeys and monkeys recovered from infection with the poliomyelitic virus. The following protocol is illustrative of the results obtained:

Two monkeys were used. Animal A had been injected intracerebrally with active poliomyelitis virus six months previously and developed the characteristic disease, which progressed to prostration. The monkey recovered but showed marked residual paralysis, with contracture of the leg muscles and moderate atrophy of certain muscle groups of the arms. This animal resisted subsequent intracerebral inoculation of active virus and his blood serum was shown to be capable of neutralizing poliomyelitis virus in vitro. Monkey B was a normal animal taken from stock. Each was inoculated intracerebrally with 1 cc. of the centrifugated sediment of a 50 cc. twenty-four hour broth culture of the streptococcus. Twenty-four hours after inoculation, both animals were somewhat less active than usual and tended to tire easily. They appeared quite normal in every other respect. Forty-eight hours after inoculation, the symptoms were about the same. Lumbar puncture revealed a very cloudy spinal fluid. The fluid from monkey A contained 12,600 cells per cubic millimeter and that from monkey B, 12,000 cells. In both cases the majority of the cells were polymorphonuclear leukocytes. The spinal fluids were spread on slides and stained by Gram's method. No organisms were observed and no growth was obtained on culture. Seventy-two hours after inoculation the animals appeared essentially normal and no further symptoms developed during the period of observation. At no time were any symptoms observed suggesting those appearing in monkeys infected with the virus of poliomyelitis. This experiment was repeated with similar results.

A normal monkey was injected intracerebrally with 1 cc. of the sediment of a twenty-four hour broth culture of Rosenow streptococci. Twenty-four hours after inoculation the animal was somewhat ataxic and moved rather slowly. Spinal fluid withdrawn by lumbar puncture was very cloudy and contained 8,200 cells, mostly polymorphonuclear leukocytes. There was no essential change forty-eight hours after inoculation, and after seventy-two hours the animal appeared normal. It was killed and the central nervous system examined histologically. The microscopic examination revealed an acute, purulent meningitis, without changes in the nerve cells, in their processes, or in the supporting structure. Scattered throughout the meninges of the brain and cord were large clumps of polymorphonuclear cells and a few mononuclears, often associated with masses of fibrin and a moderate number of erythrocytes. The characteristic nerve cell and other lesions of poliomyelitis were absent.

SPINAL FLUID AS A SOURCE OF VIRUS

The opinion of Rosenow that spinal fluid is a tissue in which the virus of poliomyelitis (identified as the streptococcus) exists is not in accord with the results of other workers.[10]

Recent tests with the spinal fluid used in the cultivation experiments already mentioned have again shown that the fluid is free from virus. For example, 2 cc. of spinal fluid which had been removed by lumbar puncture from a monkey acutely ill with poliomyelitis was without effect when injected intracerebrally into a normal monkey.

SUMMARY AND CONCLUSIONS

In twenty-four examinations of stained-film preparations of centrifugated spinal fluids from nineteen monkeys showing characteristic experimental poliomyelitis, streptococci were not found. Twenty-two cultivation tests, including the use of Rosenow's yeast medium, were made with the fluids from seventeen of the monkeys. These also failed to yield streptococci. The yeast medium itself contains streptococci; it therefore cannot be regarded as a medium of choice for the isolation of this micro-organism.

The properties of a streptococcus isolated by Rosenow from the spinal fluid of a patient with poliomyelitis correspond in essential characteristics with those of a streptococcus obtained from the brain of a normal monkey and from the air of the laboratory.

The inoculation of Rosenow's streptococcus into rabbits, which animals are generally considered as resistant to the virus of poliomyelitis, induces a purulent meningoencephalitis, such as is often associated with streptococcic septicemia. The microscopic appearance of the brain of such rabbits differs essentially from that of poliomyelitis in man and the monkey.

Inoculation effects in the rabbits similar to those produced by the Rosenow strain can be obtained with streptococci derived from poliomyelitic tissues and from other sources.

The inoculation of Rosenow's streptococcus intracerebrally in monkeys does not bring out any difference in reaction in normal animals and those recovered from poliomyelitis. This is in direct conflict with the susceptibility of normal and the insusceptibility of recovered monkeys to the virus of poliomyelitis. The microscopic change in the monkeys injected with the streptococcus is that of an acute purulent meningitis, which differs wholly from the nervous lesions present in poliomyelitis in man and the monkey.

If the streptococcus of poliomyelitis loses on cultivation its specific infecting power, this fact is in disagreement with the well known observation that the filtrable virus of the disease retains its specific infecting power as long as it is viable.

Attempts to infect monkeys by means of intracerebral inoculation of spinal fluid derived from monkeys and human beings suffering from poliomyelitis have been uniformly unsuccessful. It is therefore apparent that spinal fluid cannot be regarded as a source of the infectious agent.

Finally it may be stated that this report offers additional support to the view that the streptococcus cannot be regarded as being identical with the filtrable virus of poliomyelitis.

Sixty-Sixth Street and York Avenue.

10. Clark, P. F., and Amoss, H. L.: Intraspinous Infection in Experimental Poliomyelitis, J. Exper. Med. **19**: 217 (Feb.) 1914. Flexner, Simon; and Amoss, H. L.: Penetration of the Virus of Poliomyelitis from the Blood into the Cerebrospinal Fluid, J. Exper. Med. **19**: 411 (April) 1914.

Cyclic Vomiting.—It is now well known that the whole subject of cyclical vomiting is intimately related to that of ketosis. Frew in 1911 showed that acetonuria was present in 61.2 per cent of 662 children admitted to hospital for various reasons. It was first shown by Marfan that attacks of cyclic vomiting were regularly accompanied by excess of ketone bodies in the urine. Gamble, Ross and Tisdall state the amount of acidosis present (reduction of serum bicarbonate of blood) is fully accounted for by the excess of ketone bodies in the blood. Ross and Josephs in 1924 produced attacks of cyclic vomiting in children by starvation, and from a study of the blood sugar under these conditions suggested that hypoglycemia was probably an essential feature of the attacks. Brown and Graham in 1926 also studied the blood sugar, plasma bicarbonate, and ketone bodies in the blood and urine of children given a ketogenic (high fat and low carbohydrate) and an antiketogenic (high carbohydrate and low fat) diet, and also the effects of treating the resulting ketosis with sugar, alkalis, and alkalis plus sugar. They concluded that sugar was the most useful method of treatment.—Osman, A. A.: "Debility" in Children and Cyclic Vomiting, *Brit. M. J.*, Jan. 26, 1929.

ACHYLIA IN PERNICIOUS ANEMIA AFTER LIVER TREATMENT

EXAMINATIONS AFTER HISTAMINE INJECTIONS *

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Since Minot and Murphy,[1] in 1926, described their liver treatment of pernicious anemia, the literature has contained a large number of reports on this subject, partly by these two investigators and their collaborators, partly by others from all corners of the world—papers directed principally toward showing how the treatment promptly improved the condition of the patients. Subjectively the patients noticed the disappearance of their fatigue, glossitis and paresthesia; and objectively it was observed that the patients flourished and gained in weight, while their blood picture at the same time was approaching the normal. As might be expected, the improvement was least pronounced in symptoms due to myelopathies; and the improvement noticed in such conditions was, perhaps, more apparent than real, as the patients naturally seemed less paretic and shiftless when their general condition improved and they regained some of their former strength.

Most of these reports as to how the symptoms of pernicious anemia yield to the liver treatment are devoid of any information about one almost constant symptom of this disease—the achylia. Among the investigators who have paid particular attention to this problem, Minot and Murphy[2] reported on eighteen of their patients who had been treated with liver from two to twenty-two months. Achylia was still present in all eighteen patients.

Heath[3] examined eighteen patients with pernicious anemia with achylia after they had been treated with liver from two to eighteen months. Similar results were found by Ordway and Gorham[4] on after-examination of three patients, and by Tzanck[5] on examination of his patients.

Previous to the introduction of liver treatment, Shaw[6] reported a case of pernicious anemia with achylia, in which the secretion of hydrochloric acid was reestablished at the same time as the patient recovered. This patient, Shaw states, became ill rather suddenly while on military duty in the neighborhood of Constantinople. He did not show any signs of sprue, but he had diarrhea and the ordinary symptoms of pernicious anemia. To start with, the color index was less than 1; later it was 1.26. The author thinks that the patient had perhaps been suffering from an acute alcoholic gastritis, which in turn gave rise to the pernicious anemia, and that he recovered from the pernicious anemia because the primary cause, the alcoholic gastrititis, disappeared during his stay in the hospital. The treatment consisted in hydrochloric acid infusions by stomach tube and blood transfusions. After recovery the patient was under observation for three years, during which time he remained in good health. This case is quite unique.

In 1927, McPeak and Neighbors[7] reported a case of pernicious anemia with recovery after liver treatment and reappearance of hydrochloric acid in the stomach secretion. The patient was under observation four years, and in this time four analyses of the gastric content were made, none of which showed free hydrochloric acid. Four months after the beginning of treatment, a single analysis of gastric juice showed a free hydrochloric acid of 20, and a total acidity of 44.

Loewenberg and Gottheil[8] reported about twelve cases of pernicious anemia in which the patients were cured after liver treatment. In one of these cases they found free hydrochloric acid in the gastric juice, but unfortunately in this instance they had not made any analyses of the gastric content before treatment.

Up to the present day, therefore, examinations for achylia have been made in comparatively few cases of pernicious anemia after liver treatment, and I thought that it would be interesting to see what has been the course of the achylia in the series of patients who have been treated with liver or liver extract in Medical Department B of the Bispebjaerg Hospital.

I examined nineteen such patients, who had been treated with liver or liver preparations from three to seventeen months. Achylia was found in all of these patients prior to the liver treatment; and in some of the cases achylia had been demonstrated several years before any sign of pernicious anemia was manifest. My examinations have been made in connection with histamine injections, for, as is well known, injection of histamine elicits an increase of the stomach secretion, resulting in higher acid values, so that it is even possible in certain cases of achylia by means of histamine injection to make the mucous membrane of the stomach secrete gastric juice containing free hydrochloric acid.

Stuber and Nathansohn[9] and Carnot, Koskowski and Libert[10] examined the gastric secretion after histamine injection in achylic patients that did not have pernicious anemia. Achylic patients, some of whom had pernicious anemia, have been examined after histamine injection by Katsch and Kalk[11] and by Faber and Holst.[12] None of these authors found any free hydrochloric acid in the gastric juice of patients with pernicious anemia. In two of their patients, however, Faber and Holst found an increase in the amount of pepsin after injection of histamine.

TECHNIC

I have used a modification of Ryle's[13] and of Dobson's[14] methods of fractional gastric analysis as follows: In the morning, while the patient is fasting, an Einhorn stomach tube is passed so that the tip of the tube is about 50 cm. from the front teeth. One then has the patient drink a little water in order to make sure that the end of the tube really is within the stomach for

* From Medical Department B, Bispebjaerg Hospital, Copenhagen; Physician-in-chief, Einer Meulengracht.

1. Minot, G. R., and Murphy, W. P.: Treatment of Pernicious Anemia by Special Diet, J. A. M. A. **87**: 471 (Aug. 14) 1926.
2. Minot, G. R., and Murphy, W. P.: Diet Rich in Liver in Treatment of Pernicious Anemia, J. A. M. A. **89**: 759 (Sept. 3) 1927. Minot, G. R.; Cohn, E. J.; Murphy, W. P., and Lawson, H. A.: Treatment of Pernicious Anemia with Liver Extract: Effects upon Production of Mature and Immature Red Blood Cells, Am. J. M. Sc. **175**: 599 (May) 1928.
3. Heath, E. H.: Pernicious Anemia Treated with Liver Diet and Liver Extract, J. A. M. A. **91**: 928 (Sept. 29) 1928.
4. Ordway, Thomas; and Gorham, L. W.: The Treatment of Pernicious Anemia with Liver and Liver Extract, J. A. M. A. **91**: 925 (Sept. 29) 1928.
5. Tzanck, A.: Bull et mém. Soc. méd. d. hôp. de Paris **52**: 1166 (July 12) 1928.
6. Shaw, M. E.: Guy's Hosp. Rep. **76**: 294 (July) 1926.
7. McPeak, E.-M., and Neighbors, DeW.: South. M. J. **20**: 926 (Dec.) 1927.
8. Loewenberg, W., and Gottheil, C.: Deutsche med. Wchnschr. **54**: 615 (April 13) 1928.
9. Stuber, B., and Nathansohn, A.: Deutsches Arch. f. klin. Med. **159**: 60 (June) 1926.
10. Carnot, P.; Koskowski, W., and Libert, E.: Compt. rend. Soc. de biol. **86**: 670, 1922.
11. Katsch, G., and Kalk, H.: Klin. Wchnschr. **5**: 1119 (June 18) 1926.
12. Faber, K., and Holst, J. E.: Acta med. Scandinav. **69**: 46, 1928.
13. Ryle, J. A.: Guy's Hosp. Rep. **71**: 45 (Jan.) 1921.
14. Dobson, H. V.: Effect of Histamine on Gastric Secretion with Especial Reference to Achlorhydria, J. A. M. A. **84**: 158 (Jan. 17) 1925.

the subsequent suction with a record syringe. Next, the stomach is emptied by suction while the patient alternately sits up and lies on his back or on either side, and at the same time the tube is pulled a little back and forth in order to withdraw the entire content of the stomach. The pulse and blood pressure are recorded, the tube is fixed at the corner of the mouth, and from 0.4 to 0.5 mg. of histamine is injected subcutaneously, the dose being adjusted to the age, weight and general condition of the patient. Within a few minutes it is evident whether the histamine has taken effect, as, in that case, the patient is nauseated, feels hot, and has congestion of the face. Usually this indisposition lasts from about five to ten minutes. During the next two hours the stomach is emptied by suction every half hour in the manner just described, the pulse rate and blood pressure being recorded at the same time. The amount withdrawn is measured each time; Günzburg, Congo and phenolphthalein values are determined on each fraction, and the amount of pepsin is measured by means of Mett tubes after the method that has been described by Christiansen.[15]

TABLE 1.—*Results of Author's Modified Method in a Dyspeptic Patient*

May 15. Ewald test meal (¾ hour): 55 cc. Congo: 64. Phenolphthalein: 95.
May 21. Ewald test meal (¾ hour): 93 cc. Congo: 43. Phenolphthalein: 63.

Fractional Gastric Analysis after Injection of 0.4 Mg. of Histamine

Time	Flush	Pulse	Blood Pressure	Amount Cc.	Günsburg	Congo	Phenolphthalein	Mett
9:00	..	70	140	(7)	Faint	10	18	3.5
9:30	+	72	130	22	+	91	110	5.0
10:00	—	78	130	14	+	77	83	8.0
10:30	—	64	120	32	+	61	66	6.0
11:00	—	72	120	16	+	51	58	6.0

TABLE 2.—*Observations in a Patient With Nervousness and Dyspepsia*

April 12. Ewald test meal (¾ hour): 31 cc. Congo: 0. Phenolphthalein: 11.
April 14. Ewald test meal (¾ hour): 13 cc. Congo: 0. Phenolphthalein: 28.

Fractional Gastric Analysis after Injection of 0.5 Mg. of Histamine

Time	Flush	Pulse	Blood Pressure	Amount Cc.	Günsburg	Congo	Phenolphthalein	Mett
9:25	—	60	135	(22)	0	0	3	0.5
9:55	+	66	105	28	+	21	33	5.0
10:25	+	54	115	12	+	41	56	4.0
10:55	—	60	130	6	0	16	32	3.0
11:25	—	60	120	20	0	0	27	8.0

Table 1 shows how the acid values increase immediately after the injection of histamine and then fall off to ordinary proportions. Table 2 records the data from a patient with nervousness and dyspepsia, in whom two Ewald test meals showed achylia.

15. Christiansen, J.: Bibliot. f. Læger, 1912, p. 87.

In investigations with fractional test meals, many different methods have been used. I have chosen the procedure given here, partly because it is easy to carry out and partly because in this way one has the pure gastric juice to work with—aside from a few instances in which a little bile is mixed with the gastric juice.

Before setting to work with the examination of patients with pernicious anemia, I have thoroughly tested the method on a series of other patients, chiefly those with dyspeptic conditions. Table 1 illustrates how the method works in a dyspeptic patient. Prior to the examination, the Ewald test meal was given twice to the patient.

EXAMINATION OF PATIENTS WITH PERNICIOUS ANEMIA

After these preliminary tests I examined nineteen patients treated with liver. As already mentioned, in every one of these cases achylia had been demonstrated repeatedly by the Ewald test meal before the treatment; and the results of the examinations after the liver treatment did not show any change of this condition. Not even after histamine injection did any of the nineteen cases show the faintest trace of the Günzburg or the Congo reaction in the withdrawn gastric juice, and the phenolphthalein values stayed low in every instance. In these patients treated with liver the achylia had thus remained at its characteristic low level, and this in spite of the fact that the patients had clinically recovered with respect to the blood picture.

Nor was there any noticeable peptic digestion of the albumin in the Mett tubes. In a few instances the albumin column was seen to have diminished from 0.5 to 1.0 mm., but these amounts are so small, I think, that they cannot be taken into account in this method of roughly estimating the amount of pepsin.

TABLE 3.—*Observations in Case 7*

J. M. H., aged 53 years.
Aug. 10. Ewald test meal (¾ hour): 58 cc. Congo: 0. Phenolphthalein: 10.
Aug. 12. Ewald test meal (¾ hour): 37 cc. Congo: 0. Phenolphthalein: 10.

Fractional Gastric Analysis after Injection of 0.5 Mg. of Histamine

Time	Flush	Pulse	Blood Pressure	Amount Cc.	Günsburg	Congo	Phenolphthalein	Mett
9:00	—	96	130	(23)	0	0	2	0
9:30	+	84	90	25	0	0	4	0
10:00	+	92	100	3	0	0	10	0
10:30	—	92	110	1	0	0	..	0
11:00	—	96	120	6	0	0	6	0

As the same result was obtained on examination of all nineteen patients, it will suffice to give two of the protocols (tables 3 and 4) to illustrate the trend of these fractional gastric analyses.

The results obtained on fractional gastric analysis in the other seventeen cases were quite analogous to the observations given in tables 3 and 4. All nineteen cases are listed in table 5, which gives the largest amounts of gastric juice withdrawn in these experiments and the highest phenolphthalein values obtained in each case.

All nineteen patients showed improvement on liver treatment, not only in their subjective and objective symptoms, but, what is especially remarkable, in their gastro-intestinal symptoms as well. The achylia, however, was found to persist unchanged.

TABLE 4.—*Observations in Case 10*

H. H.
Jan. 11. Ewald test meal (¾ hour): 31 cc. Congo: 0. Phenolphthalein: 13.
Jan. 14. Ewald test meal (¾ hour): 54 cc. Congo: 0. Phenolphthalein: 23.

Fractional Gastric Analysis after Injection of 0.5 Mg. of Histamine

Time	Flush	Pulse	Blood Pressure	Amount Cc.	Günsburg	Congo	Phenolphthalein	Mett
9:00	—	90	170	(20)	0	0	2	0.5
9:30	+	90	140	22	0	0	2	0.5
10:00	+	65	165	20	0	0	3	0.0
10:30	—	85	165	7	0	0	2	0.0
11:00	—	88	160	5	0	0	3	0.5

THEORETICAL COMMENTS

In agreement with the observations of other authors, my results show that the achylia persists, even though the patients appear to recover in all other respects.

Besides Shaw,[6] only McPeak and Neighbors[7] have observed a reestablishment of the hydrochloric acid secretion. I have already mentioned Shaw's case, which certainly is an exceptional instance. The positive finding of McPeak and Neighbors is supported by a single analysis. Of course, it is theoretically possible that free hydrochloric acid may be demonstrated in the patients reported in this series after a more protracted treatment with liver, but this possibility does not seem very likely to be realized. The complete persistence of achylia in patients with pernicious anemia who in other clinical respects have recovered, or, rather, have been compensated, undeniably supports the theories which imply that achylia is primary to pernicious anemia and that it is the possible cause of the development of pernicious

TABLE 5.—*Results of Fractional Gastric Analysis in All Cases*

Case	Name	Largest Amount of Gastric Juice Withdrawn, Cc.	Highest Phenolphthalein Value
1	M. J.	7	6
2	S. R.	11	12
3	C. A. A.	4	4
4	N. T. G.	1	..
5	E. N.	14	14
6	C. A.	16	6
7	J. M. H.	25	10
8	E. K. N.	13	7
9	T. L. V.	4	7
10	H. H.	22	3
11	M. J.	7	5
12	H. K. V.	4	5
13	N. P. H.	1	..
14	C. O.	5	6
15	O. J.	4	5
16	C. C. K.	23	3
17	N. V. P.	21	5
18	K. E. T.	22	3
19	J. K. R.	21	11

anemia, as asserted by Faber,[16] Hurst,[17] and, lately, by Castle and Locke.[18]

Castle and Locke, who are working in association with Minot, have succeeded in demonstrating that the effect obtained from liver treatment may be gained by giving the patients ordinary muscle tissue (meat) that has been predigested in a human stomach with normal secretion, while muscle tissue that is not predigested in this manner has no curative effect. Castle and Locke further elaborate the theory by suggesting that lack of a specific substance which is pathogenic for pernicious anemia is dependent on a defect in digestive power rather than on a lack of ability to produce this substance; or—what amounts to the same thing—that the reason the substance is not produced rests with some defect in the digestive power essential to further synthesis of the substance, and that this faulty digestion comes from a defective condition of the stomach mucosa.

SUMMARY

Nineteen patients with pernicious anemia, who had been treated with liver, or liver preparations, from three to seventeen months, and in whom all other symptoms disappeared or improved considerably, did not show any change whatever in the achylia present, as no free hydrochloric acid could be demonstrated in the gastric juice even after injection of histamine.

55 Van Dyke Street.

16. Faber, K.: Hospitalstid., 1913; Forelaesninger holdt i Amerika, 1925.
17. Hurst, A. F.: Guy's Hosp. Rep. **76**: 287 (July) 1926.
18. Castle, W. B., and Locke, E. A.: J. Clin. Investigation **6**: 2 (Aug. 20) 1928.

ROENTGEN IRRADIATION IN THE TREATMENT OF HYPERTHYROIDISM

A STATISTICAL EVALUATION BASED ON THREE HUNDRED AND FIVE CASES

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Before an analysis of the cases referred to us for roentgen treatment of hyperthyroidism is given, a brief outline of our method of procedure in such cases would seem to be in order.

Most of these patients have been adequately studied by the physicians referring them to us. The data furnished by them are supplemented by a history of our own. Records are kept of the salient clinical manifestations, and the pulse rate, weight and basal metabolism.

Treatments are ordinarily given at intervals of three weeks. Three areas are exposed, one over each lobe of the thyroid and one over the thymic area. The following are the dosage factors employed: 5 milliamperes of current; 8½ inch spark gap; 9 inch focal distance; a 5 mm. aluminum filter and an exposure time of five minutes.

If patients are markedly or even moderately toxic, we insist that they remain in bed. In milder cases, modified rest is prescribed. We consider physical rest and mental tranquillity to be highly important and often essential adjuncts to successful treatment, and no effort should be spared to secure both. To do so requires time, tact and patience. If complete rest is indicated, it is better to insist on it from the beginning rather than to do so later. These patients need to be inspired

TABLE 1.—*Distribution of Cases of Hyperthyroidism*

	Cases
Group 1. Cases believed to be nontoxic in which roentgen therapy was not advised	38
Group 2. Cases believed to be toxic in which treatment was advised but not instituted	11
Group 3. Cases in which treatment was instituted but in which the diagnosis was subsequently changed or considered very doubtful	24
Group 4. Cases in which our records are inadequate for statistical evaluation	34
Group 5. Cases in which roentgen treatment was instituted but abandoned before sufficient irradiation had been given to determine whether or not it would be efficacious	65
Group 6. Cases in which all of the requisites for determining the efficacy of roentgen therapy were reasonably well met	305
Total	477

with hope and confidence in a successful issue, and this is always attempted, but never to the extent of overstepping the bounds of sincerity and perfect frankness. Mental conflicts should be corrected, fears allayed, and morale maintained. To accomplish this the attending physician can be of much help or a great hindrance. For instance, if the patient is fearful that a mistake is being made in using roentgen therapy rather than surgery, it is highly important that her mind be composed on the question as promptly as possible.

Supervision as to food and water intake should not be neglected. Ordinarily medication is of minor importance. Sometimes sedatives are helpful, and to meet special indications, such as cardiac decompensation,

appropriate remedies are of course used. We rarely prescribe iodine, and it is our impression that on the whole we have seen more harm than good result from its use.

Foci of infection should be sought for as a routine and eliminated as far as possible, due regard being had to the hazard that any operative procedure might entail.

From 1917 to 1927, inclusive, 477 cases were referred to us for roentgen treatment of hyperthyroidism. For purposes of this study we have segregated these cases into six groups, as summarized in table 1.

While our observations with respect to group 6 are by far the most complete and accurate, and those with which this study is chiefly concerned, some comment with respect to the other groups seems in order as an evidence of good faith in the final appraisal of results.

Group 1 was made up mainly of adolescent and simple colloid goiters which at the time of our observation did not show any evidence of toxicity. The most important factor in determining our advice to refrain from roentgen treatment in this group was a persistently normal metabolic rate. We know very little of the subsequent history of these patients. While it has been our general practice to refrain from irradiating simple hyperplasias without toxic manifestations, we are not prepared to state that such treatment would be inappropriate in all such cases.

Group 2 can be dismissed with the statement that our advice as to treatment was not heeded. We do not know anything of the subsequent history of these patients.

TABLE 2.—*Classification of Cases in Group Six*

	Number	Per Cent
Mild	37	12
Moderate	157	51
Severe	111	37
Total	305	100

Group 3 is of more than passing interest in that it brings to our attention the occasional difficulty encountered in the differential diagnosis of hyperthyroidism. It is composed in the main of cases exhibiting bizarre nervous symptoms and psychic imbalance, more or less common to hyperthyroidism, with some increase in metabolic rate, but in which the clinical ensemble is not clear cut and is inadequate for a positive diagnosis. It is only by prolonged observation that the diagnosis in many of these cases can be elucidated, and in some it will remain permanently doubtful. Although some of our patients in this group improved while under observation, we believe that their inclusion would vitiate any statistical evaluation of roentgen therapy in hyperthyroidism.

Most of the cases in group 4 occurred at a period when our interest in the subject was only casual, and the inadequacy of our data bears mute testimony to a slovenliness of method at that time for which we can only apologize.

To secure a maximum of benefit from roentgen irradiation in the treatment of hyperthyroidism requires a certain degree of patience on the part both of the patient and of the physician. It is not surprising, therefore, that some patients should have become discouraged and have abandoned treatment before much or perhaps any benefit could reasonably have been expected. This is particularly true in view of the fact that there is a competing method in the treatment of hyperthyroidism which is much older than roentgen irradiation, and much more widely popularized among both the medical profession and the laity.

Of the sixty-five patients in group 5 who abandoned treatment, twenty-four had been given only one treatment; twenty-two had been given two, and nineteen had been given three.

No purposeful effort has been made on our part to follow the subsequent history of these patients. It is known, however, that eleven were operated on, two of whom died shortly afterward; two died of intercurrent disease, and two died presumably of hyperthyroidism shortly after our last treatment. Improvement had been noted in some cases which might or might not have eventuated in complete recovery.

TABLE 3.—*Percentage of Patients With and Without Exophthalmos*

	Number	Per Cent
With exophthalmos	142	47
Without exophthalmos	163	53
Total	305	100

It is manifestly impossible to draw any fair conclusion as to the absolute or relative value of roentgen therapy in this group of cases. To include such cases in group 6, on which we base our judgment as to the efficacy of roentgen treatment, would be analogous to including in surgical statistics those patients who have had only a ligation or, after having consulted a surgeon, have refused surgical treatment entirely. We believe, however, that had treatment been maintained the results would have been essentially the same as in group 6, which we shall presently discuss, and which we believe reflects with approximate accuracy the results to be expected from this method of treatment.

The 305 cases composing group 6 were classified as to severity in the manner shown in table 2. This classification was based on a correlation of the clinical signs and symptoms and the metabolic rate, and is, of course, more or less arbitrary and subject to interpretation.

We have made no attempt to classify these cases as exophthalmic goiter or toxic adenoma. However, our records as given in table 3 show the proportion with and without exophthalmos.

The average age of the patients in this group was 37 years, and the average duration of symptoms prior to beginning treatment was two and one-sixth years.

TABLE 4.—*Results of Treatment*

	Number	Per Cent
Cured of hyperthyroidism	271	88.85
Improved	26	8.52
Unimproved	8	2.63
Total	305	100.00

The general impression has prevailed that cases of so-called toxic adenoma are less amenable to roentgen irradiation than exophthalmic goiter. Our own experience does not justify such a belief, although it is our impression that response in the former is on the average somewhat slower.

In this series of 305 cases there were twenty-six cases, or 8.5 per cent, in which a thyroidectomy had previously been performed, without improvement, with incomplete relief, or with recurrence of toxicity.

RESULTS OF TREATMENT

Table 4 shows the results obtained by the method of treatment previously outlined. The allocation of results

is predicated on observations extending over a period of years, and, as would be expected, some of the patients allocated to each group are dead. These will be considered later under an appropriate heading.

When we speak of the cure of hyperthyroidism we mean a disappearance of the signs and symptoms of thyroid intoxication, with restoration of normal metabolism, and do not necessarily imply a complete disappearance of its by-effects.

Many patients when first referred to us for roentgen treatment present unmistakable evidence of myocardial injury. Contrary to the oft repeated but unsubstantiated statements derogatory to this method of treatment, we have not seen such injury develop or increase during the course of treatment. It is noteworthy, however, that many patients in this series with undoubted myocardial changes have been able to lead an active life for years.

TABLE 5.—*Record of Weight in Two Hundred and Fifty-Three Cases*

Number who gained *	228
Number who lost	7
Number who remained stationary	18

* Average net gain for the entire group, 16 9/10 pounds (8 Kg.) per patient.

One of the most reliable criteria for judging progress in cases of hyperthyroidism is the weight curve. It has the advantage of being one criterion that is practically free from any chance of technical error, and one in which personal bias is entirely eliminated. For that reason we have singled it out of a mass of other data to indicate what happens under the regimen that we have followed. Since becoming impressed with the importance of the weight curve, we have kept records of the weight in 253 cases, with the results given in table 5.

The amount gained in the individual case has a direct relationship to the amount previously lost, so that it is the severest cases that show the greatest gain. The greatest gain in any single case of our series was 80 pounds (36 Kg.). Not infrequently the weight will go beyond the previous maximum and become a matter of concern with women who wish to maintain a slim figure. Ill advised attempts at reduction should be guarded against.

TABLE 6.—*Length of Time Patients Were Observed*

Duration	Number
From 5 to 11 years	70
From 3 to 5 years	55
From 2 to 3 years	54
From 1 to 2 years	71
Less than 1 year	55
Total	305

One of the criticisms that have been made with respect to the irradiation treatment of hyperthyroidism has been the length of time required to gain improvement or to effect a cure. On an average, 6.6 treatments per patient were administered in this series of cases, and generally 2.7 treatments were given before improvement was first noted. As cases are treated at intervals of three weeks, it is apparent that the average duration of treatment was less than five months and the average lapse of time before improvement began was approximately two months. A consideration of these facts indicates that the criticism is not well grounded.

We have not been able to determine from our records the average loss of time from work by the patients of this series, but we have every reason to believe that the economic loss from this source has not been greater than with any other adequate method of treatment, and, on the whole, has probably been less.

In this connection it might be well to emphasize the fact that in this series symptoms of hyperthyroidism on an average antedated the beginning of roentgen treatment more than two years. In many patients no serious attempt had been made to control the disease until a complete breakdown had occurred or was imminent. Undoubtedly the period of morbidity and economic loss would have been reduced, and some of the ravages of the disease averted, had treatment been begun earlier.

PERMANENCE OF CURE

It is apparent that permanence of results from any method of treating hyperthyroidism can be determined only by keeping patients under observation for a prolonged period. Table 6 shows the length of time the patients of this series have been observed. There have been four recurrences, as shown in table 7.

Three of the patients were operated on after recurrence and are now well. In at least one it is our belief that thyroidectomy was of questionable propriety as there had been a gain of 21 pounds (10 Kg.), which the patient had maintained, and his metabolic rate at the time of operation was plus 15 per cent.

TABLE 7.—*Recurrences*

After remaining well 5 years	1
After remaining well 4 years	1
After remaining well 2 years	1
After remaining well 1 year	1

We have had several patients return to us with alleged recurrences in which the facts did not justify such a diagnosis.

While the facts and figures given do not justify any final conclusion as to the permanence of cure following roentgen therapy, they at least indicate that results in this regard are quite as satisfactory as with any other method.

FAILURES OF ROENTGEN THERAPY

On referring to table 4 it will be seen that twenty-six cases are listed as improved and eight as unimproved, giving a combined percentage of 11.15 in which roentgen treatment was unsatisfactory or only partially satisfactory. Included in these figures are the four recurrences previously mentioned.

Sixteen, or approximately 50 per cent, of this group were subsequently operated on, which gives an operative incidence of 5.25 per cent for the entire series of 305 patients.

No purposeful effort has been made to follow the history of these patients subsequent to operation. The information we have concerning them is given in table 8.

Of the remaining eighteen cases in which treatment was recorded as unsatisfactory there have been six deaths as shown in table 9.

The single death from acute thyrotoxicosis in this series, exclusive of the two operative deaths shown in table 8, occurred in a case in which, after consultation, surgery was considered inadvisable because of the serious condition of the patient.

The one death in which the irradiation was a probable contributing factor was due to edema of the larynx.

It occurred at a period when we were experimenting with a considerably larger dosage than we use as a routine, and emphasizes the need for conservatism. With the dosage used as a routine, hoarseness or other signs of laryngeal irritation rarely occur and are invariably transient.

Among the factors which have contributed to our failures to cure hyperthyroidism by irradiation therapy, we have recognized the following: (1) overwhelming toxicity; (2) serious cardiovascular or other visceral changes, and (3) noncooperation on the part of the patient or the attending physician. Except in the last named, the results of surgery are not apt to be brilliant. This is reflected in our incomplete records of the cases which have come to operation.

RESULTS OF IRRADIATION IN OPERATIVE FAILURES

As has been previously stated, twenty-six patients, or 8.5 per cent of this series, had had previous thyroidectomies without cure.

The results of roentgen therapy in this group are given in table 10. The results are slightly more favorable in this group than they are for the entire series, but the difference is not sufficient to be regarded as significant.

In the two cases in which the results of roentgen treatment are recorded as unsatisfactory, the patients were operated on a second time. One patient improved after the second operation, and in the other the result is unknown. One of these patients had been given only two treatments prior to the second operation and probably should have been excluded from a computation of the results as to the efficacy of roentgen therapy. Our records indicate that essentially the same amount of irradiation is required in operative failures as in patients who have not been operated on.

TABLE 8.—*Postoperative Results*

	Number
Cured (recurrences in table 7)	3
Operative deaths	2
Dead, cause unknown	1
Improved	3
Unimproved	2
Result unknown	5
Total	16

TABLE 9.—*Causes of Deaths*

	Number
Acute thyrotoxicosis	1
Edema of larynx	1
Diphtheria with myocarditis	1
Heart disease	1
Cause unknown	1
Cause unknown but not due to thyroid	1

DEATHS FROM CAUSES OTHER THAN HYPERTHYROIDISM IN PATIENTS RECORDED AS CURED

If reference is made to tables 8 and 9 it will be seen that nine deaths have been allocated to the group in which roentgen therapy was recorded as unsatisfactory; these have been referred to previously.

Five deaths have occurred in the group of 271 cases recorded as cured of hyperthyroidism. Table 11 shows the indicated cause of death in these cases.

Further comment in regard to these cases seems unnecessary.

SEQUELAE OF IRRADIATION

There are only two sequelae that need to be considered, hypothyroidism and telangiectasia of the skin.

Hypothyroidism sufficiently pronounced to be of some concern occurred in four patients, or 1.3 per cent of this series. Needless to say it has been admirably controlled by the administration of thyroid extract. Milder degrees of hypothyroidism have occurred in a few other patients, but in these restoration to normal has been spontaneous. It has been a rather striking observation that most patients developing hypothyroidism have received less than the average number of treatments. They have been patients with every evidence of marked hyperactivity, who after from two to four treatments have passed rapidly into a state of hypothyroidism. The fact that this rarely occurs, and as a rule when least expected, imposes the necessity for critical clinical observations and somewhat frequent metabolic tests. We believe, however, that it should not prevent one from giving adequate treatment, as it may reasonably be supposed that inadequate irradiation would be as inefficacious as inadequate surgery.

TABLE 10.—*Results of Irradiation in Operative Failures*

	Number	Per Cent
Cured	24	92.30
Improved	1	3.85
Unimproved	1	3.85

TABLE 11.—*Causes of Death*

	Number
Organic heart disease	2
Cerebral hemorrhage	1
Tuberculous laryngitis	1
Unknown, but not due to hyperthyroidism	1
Total	5

Telangiectasis of the skin is a sequel of roentgen therapy that needs always to be kept in mind. It occurred in six cases, or approximately 2 per cent of the patients of this series. It occurred mostly in cases in which there was a departure from our standard technic as to dosage. It may, however, follow an unusual number of treatments under standard conditions as to dosage, without apparent skin reaction during the course of treatment. The incidence of telangiectasis can be minimized by giving consideration to these provocative factors, but it will probably always be of rare occurrence, provided primary consideration is given to the cure of the hyperthyroidism rather than to the possible development of skin changes.

COMMENT AND CONCLUSION

We realize full well that the data we have presented do not justify a dogmatic conclusion with respect to the value of roentgen irradiation in the treatment of hyperthyroidism. We believe, however, that they do clearly and unmistakably indicate that as a method of treatment it is worthy of respectful consideration.

It is not our purpose at this time to attempt a comparison of roentgen therapy with other methods of treatment. Statistics regarding the surgical treatment of hyperthyroidism (although defective with respect to indicating the general operative mortality, and inadequate as to follow-up of cases) are voluminous and readily available for comparison, while those regarding its treatment by roentgen irradiation are comparatively meager. This study has been undertaken with the idea of supplementing the latter deficiency. If it teaches anything it teaches that the many insistent claims to the effect that no other treatment can compete with surgery as to results are open to serious question.

Further than that we do not care to go at this time. The rationale of the two methods is fundamentally the same; namely, to rid the patient of abnormally functioning cells. Which of the two does it more efficiently, with due regard to the immediate and future safety of the patient, is a matter for determination, and to that end it is our hope that this contribution may be of value.

1909 Massachusetts Avenue, N.W.

BACILLUS PROTEUS SEPTICEMIA

REPORT OF TWO CASES WITH RECOVERY *

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Case reports dealing with blood stream infections due to *Bacillus proteus* are uncommon, and the reports also show that complete recovery is rare. On the other hand, infections in the urinary tract due to this bacillus are not so uncommon as was formerly thought.

A recent review of 305 consecutive cases of infection in the urinary tract other than tuberculosis, occurring in the service of the senior author at the Presbyterian Hospital, showed that in 224 cases only one type of organism was isolated. In eight of these 224 cases *B. proteus* was found in pure culture. In eighty-one cases more than one type of organism was found. Of this group of eighty-one mixed infections, *B. proteus* was present in twelve cases. To substantiate this statement mention should be made of Hagar and Magath,[1] who in a recent publication reported an extremely interesting series of cases in which infection was due to this bacillus.

B. proteus has also been found in body fluids other than the urine. Thus, Anderson,[2] in reporting a recent case, found it in the cerebrospinal fluid.

Nakagawa [3] stated that he was able to report the first case of sepsis due to this bacillus that has been recorded in Japan. His patient had sustained a fracture of the first and second lumbar vertebrae and left femur. After the fractures were cured, the patient suffered from paralysis of the lower extremities and disturbance of the bladder and rectum as well as bed sores. The bacillus was obtained in pure culture from the blood, urine and feces during the lifetime of the patient. The author thinks that the point of entrance was either the bed sores or the urinary tract.

Warren and Lamb [4] were able to find reports in the literature of only four cases yielding positive blood cultures of *B. proteus*. In their own case the patient had, besides the bacillus infection, pulmonary tuberculosis, myelogenous leukemia and Vincent's angina.

Kernan [5] reported two extremely interesting cases in which the organism was isolated from the blood stream. In one case the fatal illness began apparently as a peritonsillar abscess and in the other the patient had a discharging ear with a sinus thrombosis.

In the cases forming the basis of the present report, one patient had a stone in the kidney and the other had a renal tuberculosis associated with a very small stone in the pelvis of the kidney.

REPORT OF CASES

CASE 1.—*History.*—M. T., a man, aged 26, admitted to the Presbyterian Hospital, Oct. 4, 1927, gave a negative family and personal history, except for an injury received while driving a truck in October, 1926, when he struck a lamp post. He did not feel any pain or injury and did not have any urinary symptoms, but the first time he urinated after the accident he noticed blood in the urine and this continued for several days. He went to a hospital, where cystoscopic and roentgen examinations were made. A diagnosis of right renal calculus was made. An operation was advised and carried out in November, 1926, at which time a stone was removed.

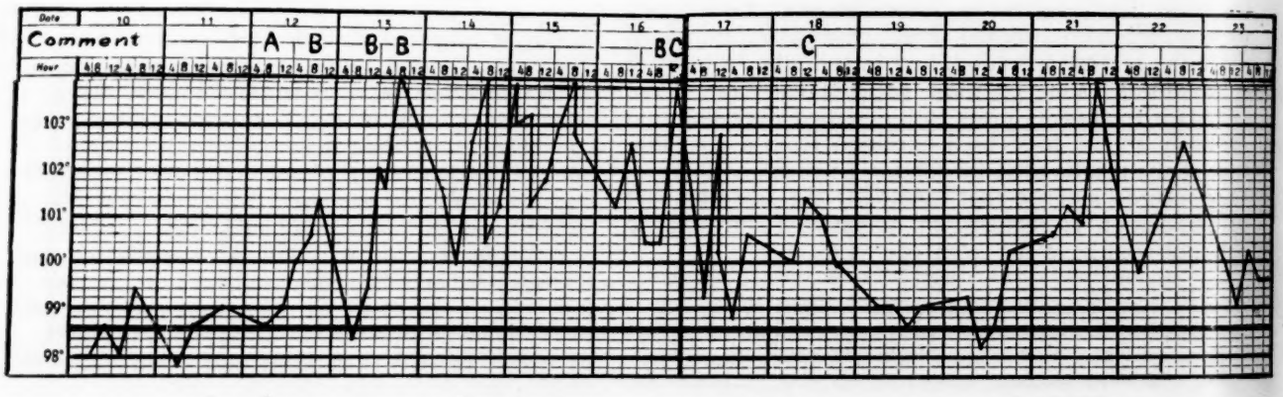

Chart 1.—Temperature chart showing dates of positive blood cultures, which were obtained on

The patient regained strength, but his wound did not close for about three months, when it finally healed and remained closed for a period of two months. At the end of that time it began to swell and became red and painful. He then visited a physician, who opened the wound and evacuated a large quantity of pus.

In September, 1927, cystoscopic and roentgen examinations were negative. From that time on the patient was troubled with a painful swelling in the side and his physician was obliged to open it every week to relieve the severe pain. He entered the Presbyterian Hospital because of the persistent discharge of pus from the wound, and no discharge of urine.

Physical Examination.—The head and neck, and the heart and lungs were normal. The abdomen was symmetrical. The liver, spleen and kidneys were not palpable. There was no tenderness, or rigidity, and there were no abnormal masses. On the right side was seen a surgical scar, 8 inches (20 cm.) long, almost horizontal, and about 2 inches (5 cm.) above the iliac crest, the result of the previous operation for renal stone. In the posterior portion of the scar was a circular depression one-half inch (12 mm.) deep and three-fourths inch (20 mm.) in diameter which discharged yellow pus.

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* From the Presbyterian Hospital.

1. Hager, B. H., and Magath, T. B.: M. Clin. North America **10**: 693-702 (Nov.) 1926.
2. Anderson, J. M.: J. Path. & Bact. **24**: 478-479 (Oct.) 1921.
3. Nakagawa: Naval M. A. Japan, Bull. 13, 1916, p. 2.
4. Warren and Lamb: J. M. Research **44**: 375, 1925.
5. Kernan, J. D., Jr.: Laryngoscope **32**: 304-310 (April) 1922.

The extremities were normal; the reflexes were normal, and examination of the external genitalia was negative. Rectal examination was also negative.

Examination of the blood showed red blood cells, 4,600,000; leukocytes, 9,000, and hemoglobin, 75 per cent. The blood Wassermann reaction was negative. The blood pressure was 126 diastolic and 90 systolic. Chemical analysis of the blood showed: urea, 1.2; uric acid, 3.9; creatinine, 1.6, and nonprotein nitrogen, 34.2.

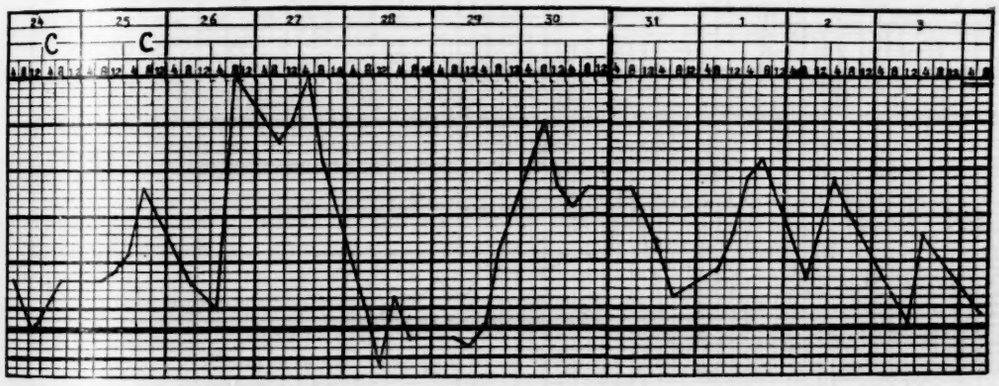
Urinalysis showed albumin, +; blood, 0; sugar, 0; pus, +, and red blood cells, +.

Cystoscopic Examination.—The bladder and ureteral orifices were normal. The ureters were catheterized without difficulty. The results of examination of the urine obtained at the time of the cystoscopic examination are shown in table 1.

On guinea-pig inoculation the bladder urine was negative for tubercle bacilli.

Roentgen Examination.—In the region of the right kidney was seen a density which remained present on different plates and a diagnosis of stone was made. The left pyelogram was normal. The right pyelogram showed the superior calix broader than normal and the inferior calix unfilled, probably because of an obstruction by the stone. The retention of the solution was decidedly prolonged.

The patient was anxious to be relieved of the inconvenience of wearing dressings and having a discharging sinus in the loin but was not willing to have the kidney operated on. Therefore it was decided to do an exploratory operation and, if possible, to try to have this sinus heal without doing a radical operation.



January 16, 18, 24 and 25: *A*, cystoscopy; *B*, chill; *C*, positive blood culture.

Operation.—October 26, under ethylene anesthesia, a large mass of old scar tissue was removed and the fistulous tract excised. Several large, firm and resistant fibrous bands were divided. There was considerable bleeding. The wound was packed with iodoform gauze and left wide open.

TABLE 1.—*Urinalysis in Case 1*

	Leukocytes per Cubic Millimeter	Smears	Cultures
Bladder	270	Gram-negative rods	B. proteus and B. coli-communis
Right kidney	20	Gram-negative rods	B. proteus and B. coli-communis
Left kidney	80	Gram-negative rods	B. proteus

Cultures and smears from the wound showed *B. coli-communis.*

November 23, the patient left the hospital without permission. There was only a slight amount of discharge from the wound. He remained at home for about two weeks.

Second Admission.—December 4 (two weeks later) the patient reentered the hospital because of a sudden, severe attack of chills and fever (104 F.), severe pain in the left lumbar region radiating to the navel, the presence of blood in the urine, frequency of urination, nocturia, and urinary drainage on the dressings for the past three days.

Physical examination was negative, except for a sinus in the loin. Examination of the blood showed red blood cells, 5,300,000; leukocytes, 15,600, and hemoglobin, 86 per cent. The blood pressure was 138 diastolic and 82 systolic. Urinalysis showed albumin, +; blood, 0; sugar, 0, and pus, +.

The temperature returned to normal after five days. The patient left the hospital again without permission, with a scant amount of discharge still draining from the wound.

TABLE 2.—*Phenolsulphonphthalein Test in Case 1*

	Right	Left
Output first 15 minutes	1%	18%
Output second 15 minutes	1%	2%
Total output in 30 minutes	2%	20%

Third Admission.—A few days after he left the hospital the second time, the patient experienced considerable pain in his side, followed by a discharge of urine. The amount of drainage was so voluminous that his clothes were saturated all the time. He reentered the hospital, Jan. 10, 1928, with the firm intention of having us do whatever might be necessary to relieve his distress.

Physical examination did not show any essential change from the previous examinations.

Examination of the blood showed red blood cells, 5,300,000; leukocytes, 24,000, and hemoglobin, 88 per cent.

On urinalysis the urine appeared cloudy; the reaction was acid; albumin, 0; blood, 0, and pus, +.

On cystoscopic examination, January 12, the bladder and ureteral orifices were normal. The left ureter was catheterized without difficulty. On the right side an obstruction was encountered about 1½ inches (4 cm.) up. The results of urinalysis of the specimen obtained at the time of the cystoscopic examination are shown in table 3.

Subsequent Course.—Five hours following the cystoscopic examination and ureteral catheterization, the temperature reached 101.4, accompanied with severe chills.

On the second day after ureteral catheterization, January 14, the patient was suddenly seized with severe pain in the back, headache, severe chills, fever and profuse sweats. Respirations were rapid and shallow (from 50 to 60 a minute) and the pulse rate was 120 a minute. He was treated with fluids and urinary antiseptics. Examination of the blood showed: urea nitrogen, 114.3; uric acid, 11.4; creatinine, 6, and nonprotein nitrogen, 194.9.

On the following day, January 15, the patient was extremely ill. His temperature rose to 104 (chart 1). He complained of severe headache and backache. Intense prostration was noted. A diagnosis of acute pyelonephritis was made.

January 16, following a hard chill, 10 cc. of blood was withdrawn for the purpose of a blood culture. A positive growth of *B. proteus* was obtained.

January 18, a second blood culture was positive for *B. proteus.*

January 24, a third blood culture was positive for *B. proteus.* This culture showed only a few colonies.

January 25, a fourth blood culture was sterile. Chemical analysis of the blood, January 26, showed: urea, 46; uric acid, 7.2; creatinine, 3.6, and nonprotein nitrogen, 88.9.

February 3, the urine contained 290 leukocytes per cubic millimeter and many oxalate crystals.

The patient refused further treatment and left the hospital without permission. According to the last report received, one month later, he had completely recovered from the acute pyelitis and the sinus had closed.

CASE 2.—*History.*—N. W., a woman, aged 27, referred by Dr. Appelbaum and admitted to the Presbyterian Hospital, March 14, 1928, had a negative previous history. The present illness began six weeks before she entered the hospital, when she developed a severe ache in the right costovertebral angle. Associated with this pain was frequency of urination, dysuria, chills and fever, and nausea and vomiting. During this time the fever varied from normal to 104 F. The vomiting persisted for ten days and the other symptoms for about three weeks. The symptoms gradually subsided and finally ceased altogether, except for backache on the right side.

TABLE 3.—*Urinalysis During Third Admission in Case 1*

	Leukocytes per Cubic Millimeter	Smears	Cultures	Red Blood Cells
Bladder.....	860	Gram-negative rods	B. proteus	0
Left kidney.....	440	Gram-negative rods	B. proteus	0

for the purpose of drainage. The temperature came down promptly, dropping ten degrees, from 107.4 to 97.

The results of the various cystoscopic examinations are given in table 4.

Two subsequent examinations of the blood were sterile.

Several guinea-pig inoculations were negative for tuberculosis.

Roentgen examination, March 18, was negative for stone.

A pyelogram of the right side, March 19, showed some dilatation and irregularity of the superior calix. The margins seemed to have a sort of mouse-eaten outline. The middle calix and the inferior calix were negative. There was some dilatation of the ureter.

From the pyelogram a tentative diagnosis of renal tuberculosis was made. Many smears for tubercle bacilli were examined, but at no time were tubercle bacilli ever found. Three sets of guinea-pig inoculations were all negative for evidence of tuberculosis. Nine pigs in all were used, that is, three for the right, three for the left and three for the bladder.

Failure to relieve the infection by means of catheter drainage and pelvic lavage led us to advise an operation, to which the patient acceded.

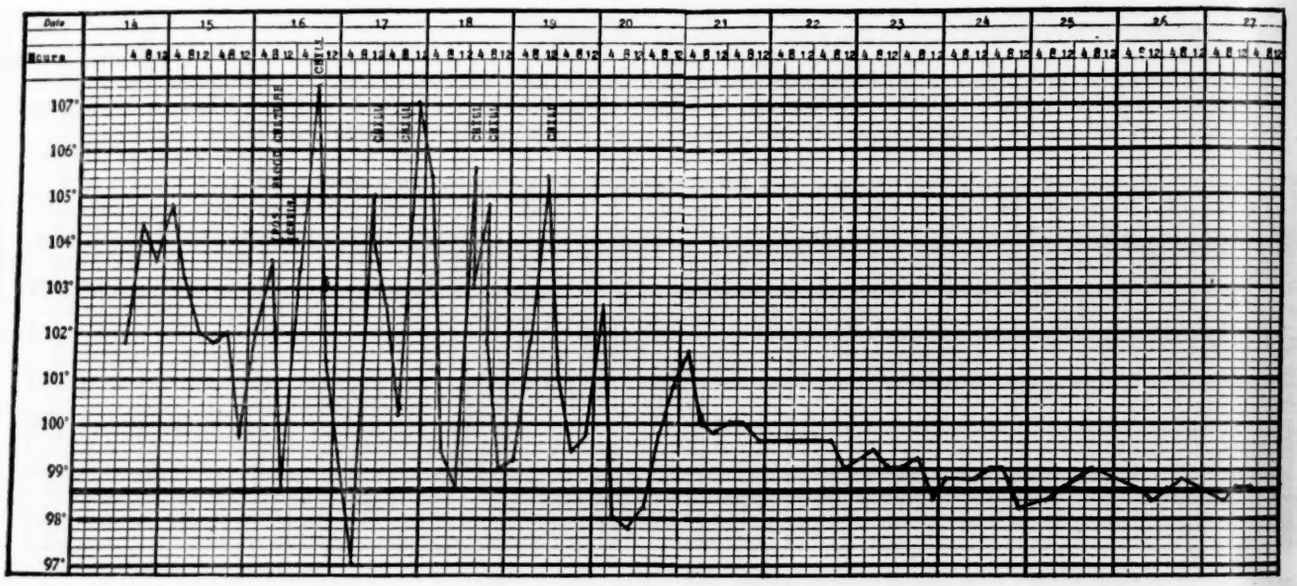


Chart 2.—Temperature chart showing positive blood culture, obtained, March 16. Indwelling catheter drainage.

Two days before entering the hospital, the patient was suddenly seized with excruciating pain in the right costovertebral angle. The pain radiated directly forward into the groin and continued for five hours. Her physician was obliged to give her an injection of morphine to put her at ease. For the next two days severe nausea and vomiting, chills and fever and pain on urination were the outstanding symptoms.

Examination.—The head, neck and chest were normal. Examination of the abdomen showed a palpable right kidney, which was tender. The physical examination was otherwise negative.

Urinalysis showed turbid urine with an acid reaction; albumin, +; sugar, 0; blood, 0, and pus, +.

Examination of the blood showed 16,300 leukocytes. Chemical analysis of the blood showed: urea, 15.1; uric acid, 4.7; creatinine, 1.5, and nonprotein nitrogen, 37.5.

Roentgen examination was negative for stone.

Cystoscopic examination was first carried out, March 15. The catheters passed into both ureters without difficulty. The right ureteral catheter was left in position for twelve hours and the kidney was irrigated frequently with physiologic solution of sodium chloride.

On the following day the patient suffered from a very severe attack of chills and fever. Immediately after the chill, 10 cc. of blood was withdrawn for the purpose of making a culture. A positive culture of *B. proteus* was obtained (chart 2).

Because of the severity of the infection, the right ureteral catheter was left in place for twelve hours, as has been stated,

Operation.—June 6, under ethylene and ether anesthesia, the usual oblique kidney incision was made. The kidney was delivered without difficulty, since there were no adhesions. The surface of the kidney was normal; the pelvis slightly dilated; the ureter normal. Exploration of the pelvis revealed a small stone at the ureteropelvic junction, which was removed through a small pyelotomy incision. As far as could be determined from the gross appearance of the kidney, the pelvis or the

TABLE 4.—*Results of Cystoscopic Examinations in Case 2*

	Leukocytes per Cubic Millimeter	Gram Smears	Cultures	Tubercle Bacilli
1 (March 15, 1928):				
Bladder.....	160	Negative	B. proteus	None found
Right kidney.	630	Negative	B. proteus	None found
Left kidney..	130	Negative	Sterile	None found
2 (March 19, 1928):				
Bladder.....	5	Negative	B. proteus	None found
Right kidney.	53,600	Gram-negative rods	B. proteus	None found
3 (March 20, 1928):				
Bladder.....	2,050	Gram-negative rods	B. proteus	None found
Right kidney.	5,530	Gram-negative rods	B. proteus	None found
Left kidney..	70	Negative	Sterile	None found
4 (May 15, 1928):				
Bladder.....	230	Negative	B. proteus	None found
Right kidney.	1,600	Negative	B. proteus	None found
Left kidney..	0	Negative	Sterile	None found

ureter, one was justified in saying that all evidence of renal tuberculosis was absent.

The patient had an uneventful convalescence and was discharged from the hospital, July 27.

A pyelogram of the right side was taken, July 19. The ureter at this time failed to show the same degree of dilatation that was indicated in the previous pyelogram. The entire pyelogram demonstrated a decided improvement in that the pelvis and the calices were smaller, with less evidence of infection.

One month later, cystoscopic examination and ureteral catheterization were again carried out. Urine from the left side was free of pus and sterile on culture and urine from the right side showed much pus and *B. proteus*.

TABLE 5.—*Phenolsulphonphthalein Test in Case 2*

	Right	Left
Time of appearance	7 minutes	4 minutes
Output first 20 minutes	6%	20%
Output second 20 minutes	4%	5%
Total output in 40 minutes	10%	25%

In view of the fact that three sets of guinea-pigs and many smears of kidney and bladder urine were negative for tubercle bacilli, and because the only bit of evidence on which a diagnosis was ventured was the first pyelogram, which showed a marked diminution in the size of the pelvis and changes in the calices, a discussion arose as to whether or not our pyelographic diagnosis was correct.

Because of the persistence of pus in the urine with repeated attacks of chills and fever, a nephrectomy was advised.

Second Operation.—Under ethylene anesthesia a nephrectomy was done, September 12. The patient was discharged from the hospital, September 29.

A histologic examination, made in the laboratory of surgical pathology at Rush Medical College, showed the presence of renal tuberculosis.

SUMMARY

1. From the available literature it would appear that blood stream infection with *Bacillus proteus* is rare.

2. Cases of blood stream infection by *B. proteus* are not necessarily fatal.

3. In the two cases reported here, both patients suffered from stone in the kidney, and one had tuberculosis in addition to the stone.

122 South Michigan Avenue.

Discovery of the Circulation Comparable to the Problem of Malignancy.—What will the future show? A few days ago I told one of my friends who has specialized in the subject of malignancy and whose acumen, experience and skeptical attitude are widely known, that I was going to suggest as a possibility that within a hundred years the etiology of malignant neoplasms would be known. He replied: "It is possible within a thousand years." I made bold to suggest, however, that within fifty years we may know enough to completely change surgical practice and to remove certain at least of the new growths altogether from the field of surgery and that we shall look back on our present efforts as extraordinarily crude. I admit today that the student of malignancy is bound to feel as Harvey felt when he first watched the beating of the tumultuous heart and attempted to make out the sequence of happenings. He wrote, you remember: "When I first gave my mind to vivisections, as a means of discovering the motions and uses of the heart, and sought to discover these from actual inspection and not from the writings of others, I found the task so truly arduous, so full of difficulties, that I was tempted to think, with Fracastorius, that the motion of the heart was only to be comprehended by God." But the circulation was discovered and the movements of the heart made clear, notwithstanding Fracastorious, and all seems simple today.—Martin, Walton: The Future of Surgery, *Ann. Surg.*, February, 1929.

FEVER INDUCED BY BACTERIAL PROTEINS IN THE TREATMENT OF SYPHILIS

OBSERVATIONS IN SIXTY-FIVE CASES *

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This study of bacterial protein fever therapy in syphilis was undertaken with a view to testing the applicability of the method under conditions in which malarial therapy was inadvisable or difficult to carry out, and for the purpose of investigating the effect of fever therapy on aspects of syphilis other than neurosyphilis and its eligibility for ambulatory use and for combination with other forms of treatment. Sixty-five cases were treated in the course of a year, but owing to the diversification of material conclusive results cannot be offered. It is possible, however, from our study to define the technic and contraindications of bacterial protein fever therapy in syphilis and to indicate certain directions in which it may prove to be a serviceable adjunct to other treatment procedures.

The literature on bacterial protein fever therapy includes the reports of Lassar,[1] Coley,[2] Spronck [3] and Loeb [4] on the extensive use of erysipelas and prodigiosus toxins (Coley) in malignant diseases. In nearly every instance there was a favorable temperature response but an unfortunately high death rate. Following the work of Wright,[5] Gay [6] and Besredka,[7] bacterial proteins were used by Scully,[8] Thomas,[9] Miller and Weiss,[10] Miller and Lusk,[11] Cecil,[12] Cowie and Calhoun,[13] Boyd,[14] Cross [15] and others with varying success in the treatment of arthritis. All of them, however, obtained satisfactory temperature results, and in none of them were the reactions to treatment as severe as those following the use of bacterial filtrates such as erysipelas and prodigiosus toxins (Coley). The subject of shock in the treatment of mental dis-

* From the Department of Dermatology and Syphilology, University of Pennsylvania School of Medicine, with the cooperation of the United States Public Health Service.

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orders has been completely reviewed by Pascal and Devesne.[16]

In the treatment of syphilis most attention has been paid to the use of malaria, recurrent fever, sodium nucleinate, tuberculin and bacterial proteins. In addition to the article by Pascal and Devesne,[16] the whole subject of the malarial treatment of neurosyphilis has been recently reviewed in a series of abstracts compiled by the United States Public Health Service,[17] and in monographs by Gerstmann,[18] and by Ferraro and Fong[19] in which the history of the development of this type of syphilotherapy is given in detail in addition to the results which had so far been obtained in the treatment of neurosyphilis. Clinical remissions have occurred in about 55 per cent of the patients, with serologic improvement in about 40 per cent. The spinal fluid Wassermann reactions and the colloidal curves were the last factors to be influenced. This improvement has been maintained from one to eight years.

In the treatment of early syphilis with malaria, the most important contributions have been made by Kyrle,[20] Behring[21] and Martini.[22] Although the type of treatment has varied considerably, the average patients have become seronegative within from sixteen to twenty weeks and have remained so for as long as three years.

Recently, Solomon, Berk, Theiler and Clay[23] have reported on the use of sodoku in the production of fever. So far their clinical data are insufficient for comparison with other methods. It appears, however, that satisfactory temperatures can be produced with less danger than following the use of malaria.

One other product,[24] said to contain saprophytic organisms which are destroyed in the circulating blood a few hours after injection, has been advocated as an agent capable of producing satisfactory fever in those cases in which malaria is contraindicated. It is the destruction of the organisms that results in the chill and the rise in temperature. The patients thus treated have not been followed long enough to allow one to judge the value of this method of therapy. The immediate clinical results, however, seem satisfactory.

Another recent method for the production of hyperpyrexia has been the use of mixed typhoid vaccine by Kunde, Hall and Gerty[25] in the treatment of forty-eight cases of paresis. The fastigium of the fever varied from 103 to 104 F. In twenty-one patients a good clinical remission was obtained, while practically all showed a beneficial change in the serology of the blood and spinal fluid. Seven of the forty-nine patients died as a result either of the disease process or of the treatment.

Bacterial protein suspensions were used in this study because of their uniformity, purity, stability and controllability of dosage, qualifications that have been less satisfactorily met by the various vegetable and synthetic protein fever producing agents.

After preliminary trials with mixed typhoid and paratyphoid (1,000 million typhoid bacilli and 500 million each of paratyphoid A and B per cubic centimeter), *Bacillus coli,* streptococci and gonococci,[26] the three last mentioned were discarded and the work was carried out with mixed typhoid suspensions. The *Streptococcus rheumaticus* of Small was given to two patients, but the dose required to produce marked temperature response was so large that symptoms of shock accompanied its use. Erysipelas and prodigiosus toxins (Coley) used in one case produced severe toxic symptoms nearly resulting in a fatality and this agent was therefore discarded.

Temperature Response to Various Doses of Protein in Millions of Bacteria

	Column A	Column B		Column C		Column D	
	Increment Used in Average Patient in Millions of Mixed Typhoid Bacilli,	Dosage and Temperature Response in Patients Highly Sensitive to Typhoid Bacilli		Dosage and Temperature Response in Patient with High Tolerance for All Bacterial Proteins		Dosage and Temperature Response in Patient Who Failed to React	
Dose	Dosage	Dosage	Temperature	Dosage*	Temperature	Dosage*	Temperature
1	200	200	105.4	200 M. T.	104.2	200 M. T.	104
2	400	400	105.6	400 M. T.	103.6	400 M. T.	104.2
3	800	600	105.4	1,000 M. T.	103.1	1,000 M. T.	102.2
4	1,200	800	105.2	1,400 M. T. 400 B. C.	104.4	1,400 M. T. 400 B. C.	102.8
5	1,600	1,000	104.8	2,000 M. T. 600 B. C.	104.0	2,400 M. T. 800 B. C.	102
6	2,000	1,400	105.1	2,600 M. T. 800 B. C. 200 Strep.	105.2	3,200 M. T. 1,200 B. C.	101.5
7	2,400	1,600	105.0	3,200 M. T. 1,000 B. C. 400 Strep.	105.0	5,000 M. T.	102.0
8	2,800	1,800	105.3	3,800 M. T. 1,200 B. C. 600 Strep.	104.1	Discontinued	
9	3,200	2,000	104.4	4,600 M. T. 1,600 B. C. 1,000 Strep.	105.2		
10	3,600	2,400	105.5	5,400 M. T. 2,000 B. C. 1,400 Strep.	104.8		
11	4,000	2,600	105.0	6,200 M. T. 2,400 B. C. 1,800 Strep. 200 G. C.	105		
12	4,400	2,800	104.8	7,000 M, T, 2,800 B. C. 2,200 Strep. 400 G. C.	104.6		

* Under the heading of dosage, M. T. indicates mixed typhoid bacilli; B. C., B. coli; Strep., mixed streptococci, and G. C., gonococci.

Treatments were given on alternate days and later on two successive days, followed by a day of rest. Excited paretic patients were treated with less intensity at the outset. The number of chills per patient ranged from five to thirty-eight, with an average of twenty-two. The technic finally adopted consisted of twelve injections in three weeks. Four patients tolerated without difficulty a second course of fever therapy.

TECHNICAL CONSIDERATIONS

All patients developed a resistance to the protein, which required steadily increasing dosage. The second

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26. The bacterial suspensions used in this work were supplied by the H. K. Mulford Company of Philadelphia.

dose was usually double the first, unless the temperature following the first injection was higher than 105.5 F. The scheme of dosage outlined in column A of the accompanying table was most satisfactory in the majority of patients. Occasionally all patients are so resistant to protein therapy that large doses of all four bacterial suspensions are necessary to produce the desired rise in temperature (typical case, column C of the table). Patients usually lost part of their tolerance during a rest interval. Three per cent of all patients treated failed to react satisfactorily except to doses so large that they produced symptoms of shock (column D of the table).

During the earlier studies with lower dosage, the average temperature response was 103.67; later, with larger doses, it was 104.2. The use of small doses seem to favor desensitization and unsatisfactory response.

Selection of patients in this series was based on complete physical and laboratory examination. The study taught us that in three groups of patients fever therapy is a critical matter or distinctly contraindicated. These include (1) patients with evidences of cardiovascular disease; (2) patients with any type of active pulmonary disease, and (3) cachectic and debilitated patients. Arteriosclerotic patients with hypertension and those with extensive fibroid tuberculosis reacted unfavorably. Four patients with diabetes, twelve with albumin and casts in the urine, three having arteriosclerosis, and twenty-one with varying degrees of chronic arthritis were treated. In the diabetic patients there was an increase in the blood sugar and glycosuria, the former sometimes reaching 250 mg. per hundred cubic centimeters. Three of these were easily controlled by the administration of 10 units of insulin as the fever subsided, and the fourth by restricted carbohydrate diet. There was even a suggestion of favorable influence on the sugar tolerance as a result of fever therapy in one patient. In the patients with albumin and casts, kidney function was unimpaired and there was no increase in the abnormal urinary observations. Blood urea and nonprotein nitrogen examinations remained normal. Of the three arteriosclerotic patients, one with possible cardiac impairment reacted unfavorably. Patients with arthritis experienced temporary exacerbations followed by gradual improvement with successive treatments.

We wish to stress the fact that definite myocardial disease is practically an absolute contraindication to fever therapy. Very small doses of mixed typhoid vaccine were nearly fatal in the two patients of this type who were treated. Two patients developed pulmonary apical signs to roentgen examination while under treatment, accompanied by symptoms of pain and cough.

MORTALITY

One patient of the sixty-five treated died as a result of treatment (1.5 per cent). This patient died with signs of cardiac failure. The only evidence of syphilis in his case was a fixed positive blood Wassermann reaction. The only postmortem finding was a very slight myocarditis, but the brain was not examined.

COURSE OF THE TYPICAL FEVER REACTION

The course of the typical reaction to fever therapy is as follows:

Within half an hour after injection, the blood pressure rises often as much as 60 mm., reaching its maximum at the time of the chill. There is then a fall of from 10 to 20 mm. below normal. Restoration to normal following fever occurs within twenty-four hours after injection. The chill usually appears from two to two and a half hours after treatment, and the patient may become cyanotic and dyspneic. A chill lasting longer than twenty minutes should arouse a suspicion of cardiac collapse. As long as the blood pressure remains high the patient is not in danger. The number of chills may vary from one to three following a single injection. The average duration of the maximum temperature is one and one-half hours, and the temperature remains above normal for from eight to ten hours, but in successive treatments these figures may be reduced to thirty minutes and four or five hours, respectively. A secondary rise in temperature may occur the day following the initial treatment (90 per cent). In 45 per cent it reached the maximum level following injection. Treatment could be repeated in spite of this rise in temperature with satisfactory results, provided the dose was not too much increased.

There was only one characteristic change in the chemical status of the blood: a rise in blood sugar to a maximum of 130 mg. per hundred cubic centimeters twenty-four hours after the administration of the protein. Three per cent of the cases showed a mild glycosuria. Blood urea and nonprotein nitrogen remained normal, and there was a slight increase in blood chlorides.

A leukopenia of from 2,800 to 3,200 at the height of the chill was followed by a leukocytosis of from 14,000 to 20,000 from eight to ten hours after treatment, with a return to normal the following day.

Three patients showed a bilirubinuria with normal liver function and van den Bergh tests.

Eighty-seven per cent of the patients reacted with nausea and vomiting immediately after the chill. This symptom was controllable to some extent by a light breakfast on the day of treatment.

Sodium salicylate relieved the back pains and headache frequently observed. Paretic patients frequently became excited and irrational at the height of the fever and were controlled by paraldehyde and a cyclobarbital derivative (phanodorm).

Foci of infection showed a distinct flare-up following protein injection in 5 per cent of the patients, including reactions in tonsillar and prostatic foci.

RESULTS OF TREATMENT

Owing to the scattering of our material through a number of cases of different types of syphilis and a relatively small number of cases under each head, only general conclusions can be drawn.

It was found possible to administer arsphenamine simultaneously with the peak temperature reached following an injection of bacterial protein without deleterious effect. Tryparsamide was likewise administered in this way without any evidence of special toxic reactions.

Fever Therapy Alone in Early Wassermann-Fast Syphilis.—Fifteen patients with seropositive primary or early secondary syphilis were treated, and in five of these who were Wassermann-fast following an average of fourteen doses of arsphenamine and ten doses of bismuth the condition was reversed completely from positive to negative by the time fever treatment was ended. Reversal usually occurred following the ninth treatment, and a provocative increase in the titer of the Wassermann reaction was noted following the third or fourth treatment in each of the five patients. Under a continuance of arsphenamine and bismuth therapy the

Wassermann reaction has remained negative during periods of observation approximating six months.

Fever Therapy Alone in Untreated Early Syphilis (Primary and Secondary).—Five patients having untreated early syphilis and positive blood Wassermann reactions were given twelve injections of bacterial protein in three weeks with an average temperature rise to 104.2 F., prolonged above 100 F. for eight hours. All lesions were healed by the time the sixth dose of protein had been given and *Spirochaeta pallida* disappeared about the time of the fifth dose. Slight reduction in the titer of the Wassermann reaction occurred in two patients; the remaining three did not show any change. Subsequent routine treatment has not indicated that the preliminary fever therapy conferred any especial advantages. Four patients of the five who have had spinal fluid examinations have reacted negatively.

Fever Therapy and Arsphenamine Combined in Early Syphilis.—Twelve protein injections and three doses of arsphenamine in three weeks were administered to five patients with frank lesions of early syphilis. This was then followed by five doses of arsphenamine and two doses of potassium bismuth tartrate. All five patients showed a reversal in the blood Wassermann reaction between the sixth and seventh weeks of treatment, or from three to four weeks after protein therapy was discontinued, and all have remained clinically and serologically negative. The blood Wassermann reversal in this small group of cases was somewhat more prompt than in patients treated by standard methods, as determined by the observations of Moore and Kemp.[27]

Fever Therapy Alone in Late Syphilis.—Six patients with various types of late lesions were given protein therapy alone. There was no effect in a patient with nerve deafness; there was prompt relief of pain in those with eye and bone lesions, and fairly rapid involution of the eye and bone lesions themselves. The effect, however, was not so marked as that obtained with arsphenamine. The results of treatment in this group were serologically more satisfactory after fever followed by arsphenamine therapy than after the use of arsphenamine and bismuth.

Fever Therapy in Wassermann-Fast Latent Syphilis.—Fifteen patients with persistently positive blood Wassermann reactions who had been under standard treatment for an average of eleven months were treated with fever therapy (fever therapy only, five patients; fever and arsphenamine, ten patients). The number of protein injections averaged eighteen a patient, and two were given thirty and thirty-three injections each. Of those receiving protein alone, two of the five showed complete reversal, and the continuance of standard treatment caused a reversal in a third at a subsequent date. Of the ten patients who received fever and arsphenamine, five showed complete reversal of the Wassermann reaction of the blood. Four of the five who showed a complete blood Wassermann reversal have remained negative under subsequent standard treatment, and one has had a relapse. One patient whose Wassermann reaction was unchanged while under fever therapy showed a negative reaction a month after discharge.

Finally, seven, or 46.6 per cent, of the blood Wassermann fast patients showed a complete reversal while under treatment with fever therapy or a combination of fever and arsphenamine. It should be recalled that these patients were all thoroughly resistant and had had a thoroughgoing trial of standard intensive treatment with arsphenamine, mercury and bismuth. In one case a slight flare-up of interstitial keratitis was observed which responded promptly to fever therapy; in a second patient, in whom a relapse of interstitial keratitis was impending, the condition was controlled by the fever therapy.

Fever Therapy in Neurosyphilis.—The results of treatment in neurosyphilis are difficult of evaluation because of the scattering of a limited material (thirty patients) through a large variety of types and the effort, the unwisdom of which subsequently appeared, to try too many methods of treatment with the small amount of material available. The following general observations may be made:

From six to fifteen fever treatments had comparatively little effect on two patients with paresis. Four patients with advanced primary optic atrophy sustained practically no benefit from a combination of fever therapy and Swift-Ellis therapy (four bacterial protein injections a week and intraspinal therapy once in two weeks). One patient in whom optic atrophy was less advanced than in the others showed distinct improvement. There was little effect on the serologic reactions. One patient with gastric crises was temporarily greatly relieved by this procedure.

Ten patients with neurosyphilis received a combination of arsphenamine and fever therapy, sixteen injections of the former and four of the latter. A tabetic patient with gastric crises was relieved by the third protein injection. Three tabetic patients were markedly relieved, with especially satisfactory response of the severe pains in the leg. A 25 per cent increase in visual fields occurred in one patient with primary optic atrophy. A patient with incomplete third nerve palsy responded completely after the third week. Two patients with paresis made slight response, and the effort to substitute tryparsamide for arsphenamine resulted in optic nerve complications. The serologic response of neurosyphilis under this regimen was approximately 25 per cent improvement in the blood and the spinal fluid reactions.

Fever Therapy and Tryparsamide.—The combination of fever with tryparsamide was employed in fourteen patients. The results under this regimen are not satisfactorily classifiable owing to the scattering of the material and the disappearance of patients from observation. Of eleven patients who received four fever treatments a week and one weekly injection of tryparsamide, 54 per cent sustained a reversal of the blood Wassermann reaction from complete positive to negative, and the majority showed some degree of symptomatic improvement. Of three patients who received a single weekly injection of protein and a single dose of tryparsamide simultaneously, two had their spinal fluids reduced from completely positive to completely negative within a period of twenty weeks. The third patient showed a partial reduction. The method, therefore, shows promise but requires a larger material and more prolonged follow-up.

SUMMARY

1. It was found possible to administer fever therapy by means of mixed typhoid-paratyphoid vaccine to sixty-five patients, an average temperature response of 103.6 F. and, under a better dosage technic, of 104.2 F., being secured, with a mortality of 1.5 per cent. Careful individual adjustment of dosage and the avoid-

27. Moore, J. E.; Kemp, J. E., and Keidel, A.: The Treatment of Early Syphilis, Bull. Johns Hopkins Hosp. **39**: 1 (July) 1926.

ance of treatment in the face of definite contraindications make this a very safe and controllable form of fever therapy.

2. An absolute contraindication is myocardial and advanced cardiovascular disease. It should be borne in mind that actual myocardial degeneration may exceed that evidenced by clinical signs.

3. Relative contraindications include arteriosclerosis, pulmonary disease and marked grades of focal infection. Diabetes, nephritis and chronic arthritis are not necessary contraindications under proper treatment control.

4. There are no important changes in the chemical status of the blood other than a rise in blood sugar, which in diabetic patients can be controlled by insulin and diet.

5. Second courses of treatment can be given in the absence of contraindications.

6. Fever therapy can be combined with the administration of arsphenamine or tryparsamide at the height of the fever, to take advantage of any possible increase in the permeability or reactivity of the tissues without special unfavorable effects in the group of patients observed.

7. Fever therapy alone will cause involution of primary and secondary manifestations, but as a method of treatment it is markedly inferior to arsphenamine.

8. Fever therapy combined with arsphenamine therapy and followed by arsphenamine and bismuth, to judge from a small group of cases, offers a somewhat more satisfactory therapeutic outlook than routine arsphenamine and bismuth therapy alone.

9. A group of approximately 46 per cent of apparently irreversible blood Wassermann reactions in various stages of syphilis were reversed by fever therapy and by fever and arsphenamine therapy combined. The permanence of the results cannot yet be determined but the outlook under a continuance of routine treatment seems good.

10. Interstitial keratitis (two cases), gastric crises (two cases), and severe persistent lightning pains (two cases) responded well to fever or to fever and arsphenamine.

11. Primary optic atrophy (four cases) when advanced does not show any response to this method of treatment, as would be expected.

12. Tryparsamide administered once weekly simultaneously with the rise in temperature produced by a weekly protein injection appears to be a method of treatment deserving further study. Striking clinical and serologic response was secured in two cases and moderate response in a third following twenty weeks of this form of treatment.

13. Bacterial protein therapy alone or in combination with arsphenamine or tryparsamide is capable of producing marked serologic as well as clinical improvement in neurosyphilis.

1011 North Charles Street—3800 Chestnut Street.

Bookkeeping of Life.—Vital statistics to the health workers are the equivalent of financial bookkeeping to any business concern, and the compiling of these statistics is indeed often called the bookkeeping of life. All the states in the Union, and in fact all civilized countries, require the reporting of births, deaths, marriages, and communicable diseases; and certified copies of original certificates are legal documents of the very first importance and prima facie evidence in court.—Davis, A. R.: The Uses of Vital Statistics, *Delaware State M. J.*, April, 1929.

TUBERCULOSIS OF THE THYROID GLAND

REPORT OF CASES *

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It was thought by the pathologists of the midnineteenth century that the thyroid was immune to the ravages of the tubercle bacillus. Rokitanski as late as 1861 stated that tuberculosis never occurred in this gland. In 1862 Lebert described one of the first authentic cases of tuberculosis of the thyroid. A year of two later Cohnheim, Cornil and Ranvier recorded cases of miliary tuberculosis in connection with general miliary tuberculosis. Chiari, Dumolard, Weigert and others reported cases of caseous tuberculosis. Virchow in 1865 stated that there was some antagonistic action between thyroid tissue and the tubercle bacillus; still he

Fig. 1.—Sclerosing tuberculosis of thyroid gland removed in case 1.

was able to report two cases of miliary tuberculosis and one of caseous tuberculosis. Morin, Roger and Garnier described a rare form of tuberculosis of the thyroid; namely, the sclerosing type. The number of cases of tuberculosis of the thyroid has increased steadily, but according to Coller and Huggins "the total number at the present time is not large and the condition is not well known to the profession in general."

The most common form of tuberculosis is the miliary type. We believe that careful search for tubercles in the thyroid glands of patients dying of general miliary tuberculosis would rather commonly reveal the miliary type of the disease. Miliary tuberculosis of this gland differs little from miliary tuberculosis of other glands. The tubercles are usually found in the stroma between or within the follicles, and they present the typical histologic appearance of tubercles found elsewhere in the body. The miliary type of the disease is primarily a pathologic entity. It is certainly not surgical, nor is it possible to make a diagnosis of it from the clinical observations.

* Read before the Medical Society of Virginia, Danville, Va., Oct. 16, 1928.

Caseous tuberculosis of the thyroid, while rare, is more often encountered than the sclerosing type of infection. The process begins as a conglomeration of tubercles and passes through the different stages leading to caseation. The progress of the disease depends largely on the vascularity of the thyroid and the natural or acquired resistance of the patient to tuberculosis.

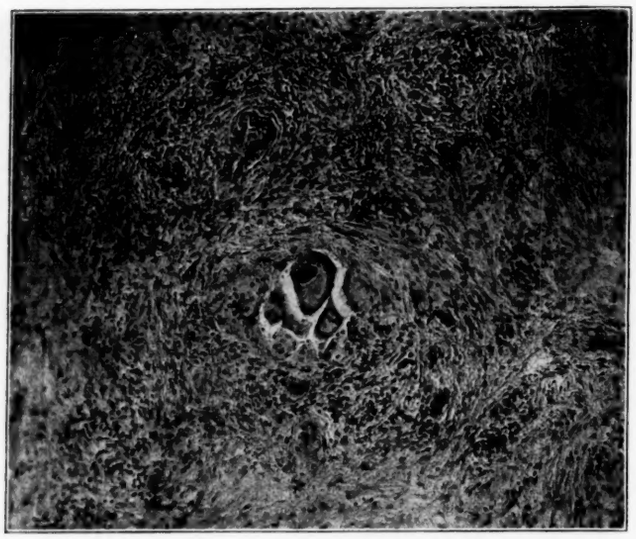

Fig. 2 (case 1).—Microscopic appearance of thyroid tissue.

Caseous tuberculosis is usually associated with tuberculosis elsewhere in the body, often in the lungs. Not infrequently a cold abscess results from the liquefaction of a caseous process in the thyroid. Dumolard in 1878 recorded a case of a fistula of the neck leading into a cold abscess of the thyroid. Calcification, fibrosis and other changes seen in tuberculosis may occur. According to Coller and Huggins, "this type of tuberculosis does not respect anatomic boundaries and the tissues of the neck are involved in the infiltration of the progressively advancing tuberculous granulation tissue. This will account for the fixation of the thyroid in many, but not all, of the cases." We often find the cervical lymphatics extensively involved. Caseous tuberculosis of the thyroid is essentially a surgical condition. The disease may give rise to symptoms which, if carefully analyzed, should lead one to make a correct diagnosis of the condition.

It has not been our good fortune to observe the miliary or the caseous forms of tuberculosis of the thyroid at the McGuire Clinic, but during the past year three cases of the sclerosing type of tuberculosis have come under our observation. It is our purpose in this paper to discuss this type of tuberculosis and to record the three cases we have seen.

CHARACTERISTICS OF SCLEROSING TUBERCULOSIS

Sclerosing tuberculosis of the thyroid has been ably described by Morin and others. Apparently the disease is more prevalent among the French, as practically all of the recorded cases have come from the French writers. There are few cases to be found in the American literature. The thyroid in this form of the disease, as one would expect, is converted in part or in whole into fibrous tissue. The tubercle bacillus has not been demonstrated in the gland in sclerosing tuberculosis of the thyroid. It is thought that the sclerosing process results from circulating toxins from a remote tuberculous focus.

According to Coller and Huggins, the characteristic histology of tuberculosis is lacking. With this statement we take issue, as we have found typical tubercles in all our cases, although we have not found caseation, liquefaction or calcification, such as one might expect to find in such extensive tuberculous processes.

The disease apparently begins as an ordinary miliary tubercle with epitheloid cells, giant cells and small round cells, and then, instead of passing into a stage of caseation, the process becomes fibrous, simulating the fibrosis seen in chronic fibrous tuberculosis of the lung and the fibrosis seen in certain forms of lupus. One of the most noticeable observations is the large number of giant cells. Ten or more giant cells may be seen in a relatively small tubercle. There is also a rather limited round cell response. The fibrous tissue is quite dense, although in the vicinity of the tubercles it may show a cellularity—the predominant cell being of the fibroblastic variety. In some zones the fibrous tissue takes on neoplastic characteristics.

The gland in gross appearance may give the impression of a malignant disease. It is very hard, elastic and yellowish white, and is usually fixed to the surrounding structures. Tubercles are not to be seen on the surface of the gland or on cut surfaces. The fibrosis may involve one lobe or the entire gland. If the fibrosis is extensive, the entire thyroid may be blotted out. At times the process may taken on cheloid properties, and in that event the fibrous tissue production may be enormous and the thyroid may show great enlargement. As a rule, the gland is small and shrunken.

REPORT OF CASES

CASE 1.—Mrs. A. H. M., aged 42, was admitted to St. Luke's Hospital, April 7, 1927, because of nervousness and tachycardia of two months' duration. At the onset of her illness she had a febrile condition thought to be grip. This was followed by enlargement of the neck in the region of the thyroid gland with marked pain and tenderness. She was very nervous and was conscious of the rapid beating of her heart. She slept only a little, her appetite was poor and she had lost 20 pounds (9 Kg.). There was no family history of tuberculosis or goiter. Her mother had died of pneumonia.

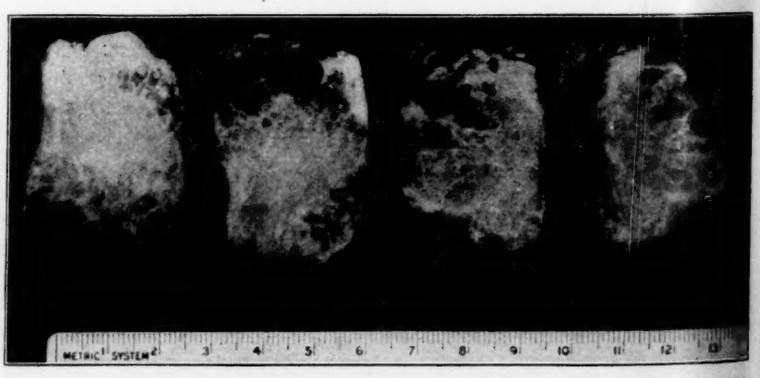

Fig. 3.—Gross specimen of thyroid gland removed in case 2.

The patient's past history was unimportant except that she had had pneumonia twenty-five years before and had frequently had bronchitis during the winter months. She had led an active life and had three children living and well.

On admission to the hospital the temperature was 99 F. and the pulse 88. Physical examination was entirely negative except for the neck. There were no palpable lymph nodes. The thyroid gland was symmetrically enlarged, each lobe feel-

ing about the size of an egg. The whole gland was very hard and was fixed in position, although it moved with the trachea on swallowing. The blood count showed 4,000,000 red cells, 62 per cent hemoglobin, 14,000 leukocytes, 75 per cent polymorphonuclears and 25 per cent lymphocytes. The Wassermann reaction was negative on two examinations and urinalysis did not show anything unusual. The basal metabolic rate was minus 4.

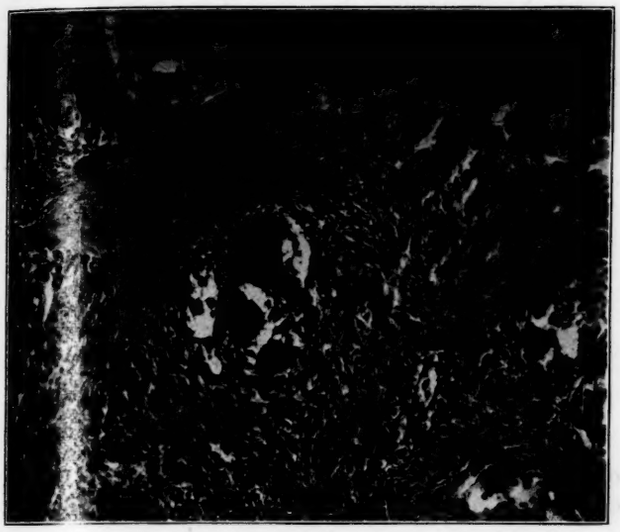

Fig. 4 (case 2).—Section of thyroid tissue.

At operation the gland was easily separated from the overlying muscle; it felt very firm and appeared to be molded about the trachea. There was only a small amount of thyroid tissue on the outside of the hard area. The major portion of each lobe was removed with considerable difficulty. Convalescence from the operation was unusually smooth; the temperature did not exceed 99.5 and the pulse rate remained 90 or under, and both were within the normal limits ten days after operation. The neck was entirely healed in three weeks.

A pathologic diagnosis of sclerosing tuberculosis of the thyroid gland was made.

Nine months after the operation the patient was apparently well. There was still some nervousness and occasional soreness in the neck, but she had gained 17 pounds (8 Kg.); she did not have any fever and the pulse rate was about 80.

CASE 2.—Mrs. N. M. K., aged 43, was admitted to St. Luke's Hospital, Aug. 11, 1927, because of fever, soreness in the neck, and cough. She had had paroxysms of severe coughing for eight months but noted the soreness in her neck only two months before being admitted to the hospital. She had had slight rises in temperature and the pulse had been accelerated.

She had been a patient in this hospital on two previous occasions for treatment of severe diabetes mellitus. During recent years the diabetic state had been controlled by diet and insulin.

On admission her temperature was normal and the pulse 96. She appeared acutely ill. The physical observations were unimportant except for a general enlargement of the thyroid gland to about twice the normal size. The gland was very hard and appeared adherent to surrounding structures. It was quite tender to the touch and there was redness of the skin over the front of the neck. The tonsils were not diseased; the teeth showed slight pyorrhea. The blood count revealed 4,000,000 red cells, 56 per cent hemoglobin, 9,200 leukocytes, 61 per cent polymorphonuclears and 39 per cent lymphocytes. The Wassermann reaction was repeatedly negative. The urine was sugar free until after the operation and the blood sugar was 140 mg. per hundred cubic centimeters of blood. The basal metabolic rate was plus 44, but the temperature at the time of the test was 100.

The patient remained in the hospital three weeks before operation. During this time the afternoon temperature was approximately 101 and the pulse rate ranged from 100 to 110. The local swelling and tenderness remained unchanged.

September 3, a subtotal thyroidectomy was done. The gland was very hard, was densely adherent to the surrounding muscles, and was removed with great difficulty. Practically the whole gland had been replaced by fibrous tissue and only a small amount of normal thyroid tissue remained on the periphery. Immediately after operation the patient had a terrific reaction which appeared to be due to acute hyperthyroidism, although it was accompanied by acidosis and marked hyperglycemia. The blood sugar on the day following operation was 530 mg. per hundred cubic centimeters of blood and remained high for several days in spite of large doses of insulin. The whole condition gradually improved; the temperature remained normal after the fourteenth day, when the wound was entirely healed. The pulse rate remained accelerated, being between 90 and 100.

A pathologic diagnosis of sclerosing tuberculosis of the thyroid gland was made.

Four months after operation the patient had gained 10 pounds (5 Kg.) and felt well though she was still conscious of the rapid heart, the pulse rate being from 96 to 100. There was no soreness or swelling in the neck.

CASE 3.—Mrs. L. F. W., aged 37, was admitted to St. Luke's Hospital, Oct. 4, 1927, because of nervousness, tachycardia and goiter. Two months before she noticed soreness in her neck; two weeks later she became quite nervous, and shortly after this was conscious of a rapid heart rate. She had been confined to bed for several weeks and recently had had marked tremor of the fingers. She had lost 20 pounds (9 Kg.) during the two months preceding examination.

The family history was negative for goiter and tuberculosis.

The past history gave several items of interest. The patient had had pneumonia some years before and more recently grip. She had had tonsillitis frequently until the tonsils were removed two years before. For a number of years she had had an anal fistula.

On admission to the hospital the temperature was 99.4 and the pulse 110. Physical examination was unimportant except for the thyroid, which was enlarged and hard. The right lobe was about the size of an egg. The blood showed 3,800,000 red cells, 65 per cent hemoglobin, 8,000 leukocytes, 65 per cent polymorphonuclears and 35 per cent lymphocytes. The urinalysis and the blood Wassermann reaction were negative. The basal metabolic rate was plus 22.

Fig. 5.—Sclerosing tuberculosis of thyroid gland removed in case 3.

A subtotal thyroidectomy was done, October 7. The gland was hard, friable and adherent to surrounding structures. The patient's recovery was uneventful; she remained afebrile after the sixth day but the pulse remained around 90. The wound was entirely healed in three weeks.

A pathologic diagnosis of sclerosing tuberculosis of the thyroid gland was made.

Three months after operation the patient had gained 12 pounds (5 Kg.) and did not have fever or sweats; the pulse rate was normal, but there was slight soreness in the neck and she was nervous at times.

COMMENT

The three cases reported here have much in common from both the clinical and the pathologic points of

view. The patients were all women of approximately the same age (average, 41 years); all complained of soreness and tenderness in the region of the thyroid of a few months' duration; all three had slightly elevated temperatures and accelerated pulse rates; two had lost weight (average, 20 pounds); all were nervous, and two had increased basal metabolic rates. No positive signs of other tuberculosis were found in any of them, but one had had bronchitis for several years, and another had the scar of a cervical abscess and a chronic anal fistula. Pathologically all had the fibrous type of tuberculosis, which is the most unusual manifestation of the disease. The wounds healed in from two to four weeks; all gained weight (average, 10 pounds), and the general symptoms were largely relieved.

The diagnosis of sclerosing tuberculosis of the thyroid is important. Our first patient was suspected of having a malignant condition until a frozen section clarified the diagnosis. The second patient seemed to have an acute pyogenic infection and operation was delayed. The third case was diagnosed properly prior to operation because we had seen the other two so shortly before.

Tuberculosis of the thyroid is usually incidental to tuberculosis in other parts of the body; it is found more often at autopsy than at operation, but it is sometimes found when not suspected in adenomatous goiters.

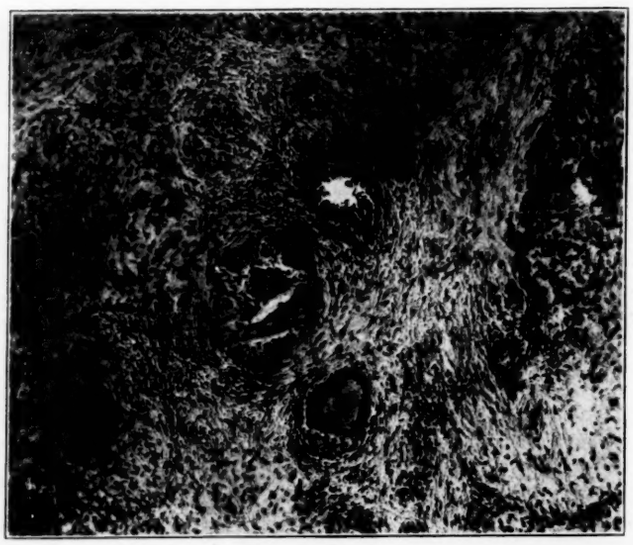

Fig. 6 (case 3).—Microscopic changes in thyroid tissue in sclerosing tuberculosis.

The fibrous type, to which all of our cases belong, is easily confused. It has the same appearance as gumma of the thyroid but can be distinguished from it by the presence of pain, tenderness and fever. The Wassermann reaction should give a positive differentiation, and in the early stages there is likely to be an increased metabolic rate in tuberculosis and a low rate in syphilis. It can be differentiated from acute thyroiditis by the less acute onset, less intense pain and tenderness, lack of increase in the leukocyte count, and the more chronic course. It is more difficult to rule out malignant disease, but the fever, tachycardia, tenderness and increased metabolic rate would suggest the inflammatory nature of the gland. If confusion exists even at operation, a frozen section of removed tissue will correct it. This differentiation if of great importance, because the operation for malignant disease should be more radical than is necessary for tuberculosis.

The disease is a destructive one, so that in cases of long standing, lack of thyroid tissue may result in myxedema. In the early stages a mild degree of hyperthyroidism is likely to be present.

The treatment consists in the surgical removal of the diseased tissue as completely as possible, although, if a small amount of infected gland is left, the wound will heal and the body will take care of the remnant. This should be accompanied by the proper hygienic and dietary regimen for a tuberculous patient.

The prognosis for a local cure of the disease is excellent unless there is extensive invasion of surrounding structures. The presence of other foci of the disease determines the general outcome for the patient.

ANTERIOR PITUITARY HORMONE IN THE BLOOD DURING PREGNANCY

PRELIMINARY REPORT *

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SAN FRANCISCO

The determination in recent years of exact details concerning the cyclic estrual changes that occur in common laboratory animals has served to open a most important field of research. Studies conducted with rats and mice have led to the identification of an ovarian and an anterior pituitary hormone, and in addition have resulted in the development of standard tests for these particular substances. It has thus been possible to find them in various tissues and under different conditions by means of injection experiments carried out with castrated and noncastrated mature and immature female white mice or rats. The present study has been undertaken to obtain some information regarding the presence of such hormones, and particularly the anterior pituitary hormone in the blood of pregnant women, and to note the changes set up in the genital organs of immature female white mice following the injection of human blood serum.

TECHNIC

The technic consisted in taking from 15 to 20 cc. of blood, under sterile precautions, from the arm vein of each patient. This blood was then centrifugated or allowed to settle in order to obtain a clear serum, which was injected subcutaneously in 0.5 cc. doses, twice daily, into an immature albino mouse, until the animal had received a total of from 3 to 5 cc. (Since Engle and Rosasco [1] have observed that the age at which puberty normally occurs in white mice is between 28 and 42 days, with a mean of 35 days, a limit of twenty-four days was set as a precaution to obtain definitely immature animals.) The mice were carefully watched over a period of five days following the first injection of serum, for the establishment of the vaginal introitus. When this had occurred, vaginal smears were made and examined for the presence of cornified cells alone or with nucleated epithelium and an absence of leukocytes—observations that indicate an estrual condition, as shown by Stockard and Papanicolaou [2] in the guinea-

* From the Department of Obstetrics and Gynecology, Stanford University School of Medicine.

1. Engle, E. T., and Rosasco, J.: The Age of the Albino Mouse at Normal Sexual Maturity, Anat. Rec. **36**: 383 (Oct. 25) 1927.

2. Stockard, C. R., and Papanicolaou, G. N.: The Existence of a Typical Oestrous Cycle in the Guinea-Pig With a Study of Its Histological and Physiological Changes, Am. J. Anat. **22**: 225 (Sept.) 1917.

pig, by Long and Evans [3] in the rat, and by Allen [4] in the mouse.

The condition of estrus in an injected mouse was usually noted on the third or on the fourth day, and the animal was then killed and the genitalia were examined. Microscopic slides were made of the vaginal wall in order to corroborate the observations of the smear, and serial sections of both ovaries were carefully studied.

REACTIONS IN IMMATURE MICE

A study of the tissues of the test animals in which estrus had been induced showed that the resulting reactions could be grouped into three categories according to certain characteristics:

1. In the first group, the animals presented the changes that have been described as a test for ovarian hormone when induced in adult spayed mice (Allen-Doisy test). The vagina, both in smears and on microscopic examination, showed marked stratification and cornification of its squamous epithelium (fig. 1). The uterus was swollen and edematous, and in some instances had hypertrophied to many times its normal size. The ovaries, however, did not present any changes whatever, and on microscopic examination were seen to correspond to the ovaries of a mouse that has never ovulated (fig. 2).

The interpretation placed on this result is that the reaction was induced solely by the ovarian follicular hormone. This is in keeping with the observations of a number of workers who have demonstrated the presence of this substance in the circulation during pregnancy by preparing various extracts from blood and injecting them into adult castrated mice. It is of some interest to note, however, the comparatively small amounts of serum required to produce estrus in immature mice as compared to that needed when using adult castrates. Frank and Goldberger [5] with their method of alcohol-ether extraction used 40 cc. of blood and yet were able to demonstrate ovarian hormone only once in fifteen patients from the fourth to the eighth week, and in eight out of thirteen patients from the eighth to the twelfth week. In her quantitative analysis, Smith [6] found that as much as 50 cc. of blood from patients at the sixth week following the onset of the last menstrual period must be used to produce a "slight definite change" in the appearance of the vaginal smear in ovariectomized mice. It was not until the sixth month that quantities as small as 5 cc. were able to give a definite change.

2. The second type of reaction noted is one in which, in addition to the signs of estrus, examination of the mouse ovaries showed evidence of normal ovulation. If the ovaries were sectioned at the time that the vaginal introitus was first established and the smears were positive, a general increase in the vascularity of the organ and the presence of a number of well formed maturing graafian follicles could be demonstrated. If the autopsy was delayed for twenty-four hours or longer, ovulation had taken place and corpora lutea were found in various stages of development or regression.

Since many observers have pointed out that ovarian hormone does not produce such changes in the ovaries (Frank, Kingery and Gustavson [7]; Aschheim and Zondek,[8] and Fels [9]), it is clear that some other influence must be sought here. The solution is found in the anterior pituitary implantation experiments of Smith and Engle,[10] and of Zondek and Aschheim.[11] They have found that the induction of estrual changes accompanied by ovulation can be readily accomplished in very young rats or mice by the implantation of fresh anterior pituitary substance, while this could not be done by any of the numerous other tissues and extracts that they employed. They also pointed out that estrus could not be induced in spayed animals, as is done by ovarian hormone, so that the assumption is that anterior pituitary acts as a stimulant to the ovary to elaborate the hormone required for the characteristic changes of estrus (vaginal smear, hypertrophy of the uterus). In the light of these observations the test for anterior pituitary substance would consist in the induction of estrus accompanied by ovulation in immature mice (Zondek and Aschheim test), while ovarian hormone is demonstrated by estrual changes in a spayed animal (Allen-Doisy test).

3. The reactions observed in the third group are by far the most important and interesting. The mice developed estrual changes as in the other instances, and in most cases normal graafian follicles or corpora lutea were seen, but in addition certain abnormal and characteristic processes were evident in the ovaries. In the first place, there occurred a degeneration of some germinal follicles, but instead of the usual formation of the so-called corpora atretica (death of the granulosa and hypertrophy of the theca cells) one found an active growth of the granulosa cells and their extensive transformation into lutein cells. The ovum meanwhile remained imprisoned in the follicle, and as this luteinization progressed, small capillary vessels made their way into the structure. The resulting picture, therefore, was of a corpus luteum which had become more or less vascularized and in which the ovum was to be seen undergoing degeneration (figs. 3, 4 and 5).

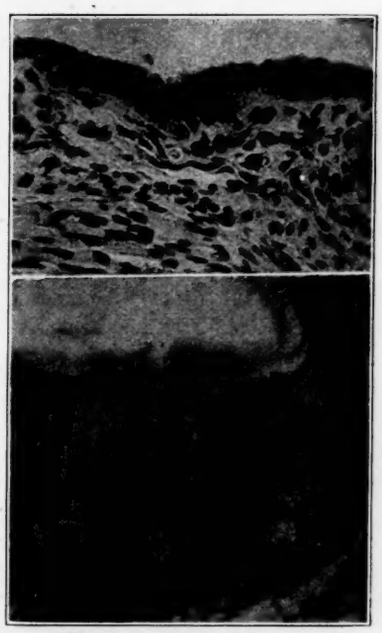

Fig. 1.—Vaginal wall of immature mouse: above, normal control; below, extensive stratification and cornification of the surface epithelium, showing that the animal is in a state of estrus.

3. Long, J. A., and Evans, H. M.: The Oestrous Cycle in the Rat and Its Associated Phenomena, Mem. Univ. California **6**: 98, 1922.
4. Allen, E.: The Oestrous Cycle in the Mouse, Am. J. Anat. **30**: 297 (May) 1922.
5. Frank, R. T., and Goldberger, M. A.: Clinical Data Obtained With the Female Sex Hormone, J. A. M. A. **90**: 106 (Jan. 14) 1928.
6. Smith, Margaret G.: A Study of the Ovarian Follicular Hormone in the Blood of the Pregnant Woman, Bull. Johns Hopkins Hosp. **41**: 62 (July) 1927.
7. Frank, R. T.; Kingery, H. M., and Gustavson, R. G.: The Female Sex Hormone: II. An Analysis of Factors Producing Puberty, J. A. M. A. **85**: 1558 (Nov. 14) 1925.
8. Zondek, B., and Aschheim, S.: Hypophysenvorderlappen und Ovarium, Arch. f. Gynäk. **130**: 1, 1927.
9. Fels, E.: Die Sexualhormone im Blute, Arch. f. Gynäk. **130**: 606, 1927.
10. Smith, P. E., and Engle, E. T.: Experimental Evidence Regarding the Rôle of the Anterior Pituitary in the Development and Regulation of the Genital System, Am. J. Anat. **40**: 159 (Nov. 15) 1927.
11. Zondek, B., and Aschheim, S.: Das Hormone des Hypophysenvorderlappens, Klin. Wchnschr. **6**: 248 (Feb. 5) 1927.

The transformation of the cells of follicle cysts into lutein-like cells has been known to occur for a long time, and was first recognized in the human being by Robert Meyer. However, the process of extensive luteinization of unruptured follicles with the formation of these abnormal corpora lutea was first described in experimental animals by Long and Evans,[12] who found them in the ovaries of rats that had been given an

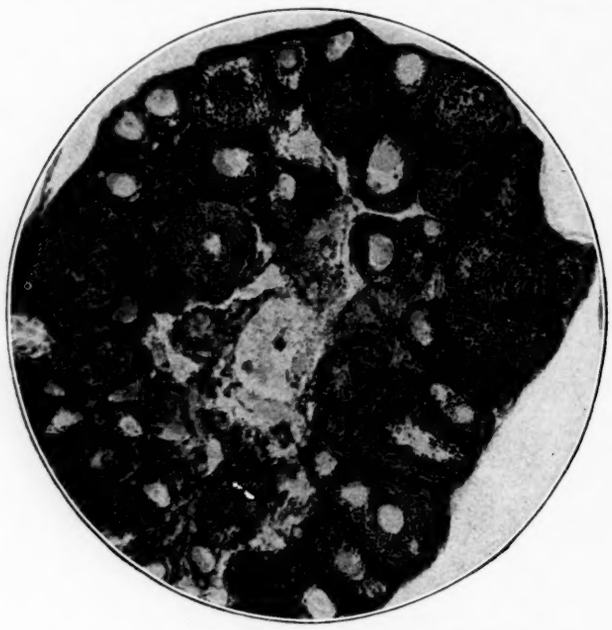

Fig. 2.—Normal ovary of an immature white mouse.

extract of the anterior pituitary over a prolonged period of time. Smith and Engle[10] also described a luteinization of the cells lining follicle cysts following implantations of fresh anterior pituitary gland into mature white mice. Fels[9] obtained the abnormal corpus luteum structures following the injection of blood serum from pregnant women and gave them the name

Observations in Forty-Eight Normal Pregnancies

Duration of Pregnancy in Weeks	Number of Cases	Negative	Group 1 (Ovarian Hormone)	Group 2 (Anterior Pituitary)	Group 3 (Anterior Pituitary)
From 4 to 8.....	20	2	4	2	12
From 9 to 12.....	13	0	4	3	6
From 13 to 16.....	4	0	0	1	3
From 17 to 20.....	2	0	1	0	1
From 21 to 24.....	3	0	1	0	2
From 25 to 28.....	2	0	1	0	1
From 29 to 32.....	1	0	0	0	1
From 37 to 40.....	5	0	0	2	1
Total.....	48	2	11	8	27

of "pseudocorpora lutea." Finally, Aschheim and Zondek[13] have placed a great deal of importance in their appearance as of diagnostic value in their "pregnancy test," which is based on the injection of urine into immature white mice. They object to the appellation given them by Fels, and refer to them as "corpora lutea atretica."

The exact significance of this process of luteinization is not understood, but there is definite experimental evidence that at least under certain circumstances the anterior pituitary markedly stimulates lutein cell growth. For the present purpose, therefore, the finding of this process may be considered as further evidence of the presence of anterior pituitary substance.

The second characteristic feature of this third group of changes in the mice which received injections of blood serum is a vascular phenomenon, in that there were extensive hemorrhages into follicles, some of which had undergone partial or complete luteinization (fig. 3). In one or two instances this hemorrhage was found in the cavity of an apparently normal graafian follicle, and in many cases surrounded the ovum in the center of one of the abnormal corpus luteum structures already described. The most striking and most common finding, however, was of a distended follicle which was completely filled by blood clot and in which the degenerating ovum was frequently observed completely isolated (fig. 4). These blood-filled cysts could be seen grossly with a small lens or with the naked eye as fine reddish dots on the surface of the ovary. They have been extensively described by Aschheim and Zondek,[13] who state that they have found such a process only following the injection of anterior pituitary substance and that they are thus of diagnostic importance. These authors believe that the blood-filled cysts are a direct result of the intense hyperemia which is set up in the ovary by the administration of anterior pituitary hormone, and that the blood finds its way into the follicle from the small theca vessels.

RESULTS

In all, 100 patients have been examined to date. Of these, forty-eight represented normal pregnancies at various stages, as indicated in the accompanying table. The majority of observations were made during the first half of gestation, and it is noted that in only two

Fig. 3.—Ovary of an immature white mouse following the injection of blood serum from a pregnant woman and showing changes attributed to the anterior pituitary hormone: *a*, follicle cyst, the cells of which have undergone luteinization; the cavity is filled with blood and the degenerating ovum can be seen; *B*, a normal graafian follicle; *C*, a follicle containing free blood in its cavity.

instances was there no reaction in the mice injected. In eleven cases the results indicated only the presence of ovarian hormone (group 1), while eight gave the reaction for group 2 and twenty-seven that for group 3. Thus, the presence of anterior pituitary substance was

12. Evans, H. M.: Harvey Lectures, Philadelphia, J. B. Lippincott Company, 1923-1924, p. 212.

13. Aschheim, S., and Zondek, B.: Schwangerschaftsdiagnose aus dem Harn (Durch Hormonnachweis), Klin. Wchnschr. **7**: 8 (Jan. 1) 1928; Die Schwangerschaftsdiagnose aus dem Harn durch Nachweis des Hypophysenvorderlappenhormone, ibid. **7**: 1404 (July 22), 1453 (July 29) 1928.

demonstrated in thirty-five out of forty-eight normal pregnancies, and in two instances this occurred as early as five days after the expected period was due. Fels [9] obtained positive results in thirty out of thirty-eight patients examined.

There were fifty-two observations in the series of controls. These patients were chosen at random from the gynecologic and obstetric services. Eleven patients

Fig. 4.—Ovary of an immature mouse, illustrating some of the changes attributed to the anterior pituitary hormone present in the blood of pregnant women: *a*, a large blood-filled cyst in the cavity of which the ovum can be seen; *B*, a corpus luteum structure arising from a follicle in which normal ovulation has not occurred.

did not have any pelvic disease and represented various periods of the menstrual cycle; two had had abnormal pregnancies, one a missed abortion of six months' duration and the other an ectopic gestation; eleven were postpartum patients and the blood had been taken at times varying from forty-eight hours to six months after delivery; eight had carcinomatous growths in the pelvis, and twenty represented various gynecologic conditions—pelvic inflammatory disease, chronic cervicitis, menopause, hyperplasia endometrii, dermoid cyst of the ovary and fibromyoma uteri.

Two of the controls gave the reaction for group 1; namely, for the presence of ovarian hormone. One patient had missed one menstrual period but proved not pregnant, and in both instances the blood was obtained shortly before the onset of menstruation. The occurrence of a high concentration of ovarian hormone in the circulation during the premenstrual phase has been demonstrated by several observers; for instance, by Frank and Goldberger,[5] and by Hirsch.[14]

There were six cases which gave positive results for anterior pituitary hormone, and these are of sufficient interest to be cited separately. Two gave the reaction characteristic of group 2:

CASE 15.—Age 45. Menopause. Amenorrhea three months, followed by irregular uterine bleeding for six weeks. Not pregnant.

CASE 58.—Age 52. Carcinoma cervicis uteri. Menopause seven years before examination.

14. Hirsch: Die Schwankungen des Sexualhormones im Blute der Frau, Arch. f. Gynäk. **131**: 173, 1928.

Four gave the reactions of group 3:

CASE 46.—Carcinoma of cervix uteri. Three radium applications to pelvis two months before. One month before this treatment the test was negative.

CASE 59.—Recurrent carcinoma of the cervix. Radical operation two years before. Radiation therapy during past year.

CASE 51.—Amenorrhea for two months, then normal menstruation. Blood obtained in seventh week of period of amenorrhea.

CASE 96.—Bilateral oophorectomy for pelvic inflammatory disease nine days before blood was obtained.

These six patients are of interest chiefly because none of them apparently had normal functioning ovaries. Two had had bilateral oophorectomies; one had passed the menopause seven years before; two had had periods of amenorrhea just before the blood was taken, and another gave a positive test two months after she had had three intensive radium treatments to the pelvis, although a test made before these treatments were given was negative.

COMMENT

The results of these studies open several questions for discussion. The first is in regard to the value and significance of the varied results obtained in the patients of groups 2 and 3. Zondek and Aschheim, who were the first to make use of these changes in immature mice as a test for anterior pituitary, are assured that the reactions in both cases are due to a hormone from this gland, and in the light of the evidence at present available there is no reason for thinking otherwise. However, as a result of their injections of urine as a test for pregnancy they state that the changes in group 3 should be considered as characteristic of gestation since they observed them only four times in 254 controls,

Fig. 5.—High power magnification of the abnormal corpus luteum shown in figure 4. Attention is called to the ovum surrounded by lutein cells.

whereas they obtained them 193 times in 197 specimens of urine from pregnant patients. In the present study when blood was examined, the percentage of positive results characteristic of group 3 was much higher, namely, four out of fifty-two controls, while in the pregnant patients this occurred only twenty-seven times in forty-eight examinations. For this reason it does

not seem that one should consider the abnormal processes of group 3 as altogether typical of pregnancy. This would lead one to speculate as to exactly what occurs: whether under certain conditions the anterior pituitary hormone undergoes a modification; whether there are two hormones concerned (as suggested by Evans and Simpson [15]); whether the reaction is a purely quantitative one, or, finally, whether there is the intervention of some other substance which acts in addition to the anterior pituitary.

As has been noted, six of the fifty-two controls showed the presence of anterior pituitary in the circulation, and it is interesting to note that each of these patients had had a bilateral oophorectomy, a sterilization by irradiation, or preceding periods of functional amenorrhea. Since all other patients who showed positive results were pregnant, it appears that the only ones in this series showing anterior pituitary substance in the blood were women in whom ovulation was suspended. It is also well known that both during pregnancy and following experimental castration the anterior pituitary undergoes marked hypertrophy. This finding in clinical patients is at present undergoing further investigation.

Considerable attention has been directed recently toward the value of tests for ovarian and anterior pituitary hormones as a diagnostic method of determining pregnancy. Zondek and Aschheim,[13] and Louria and Rosenzweig,[16] have examined urine with apparently much success, but are insistent that anterior pituitary substance, and particularly the group 3 changes, should be demonstrated, and not solely ovarian hormone. Siddall [17] has employed blood serum but depended mainly on ovarian hormone effects, namely, the hypertrophy of the uterus, for his positive results. The present study was originally begun in order to estimate the value of these observations as a test for pregnancy, but it is felt that the results are not altogether satisfactory. If only the induction of estrus following the injection of blood serum into immature mice is used as a positive test for pregnancy, then a high percentage of favorable results is obtained; namely, forty-six out of forty-eight. However, this necessarily increases the percentage of error, since ovarian hormone can produce this and it is fairly easily demonstrable in a number of conditions and even in normal persons during the premenstrual phase. The demonstration of anterior pituitary hormone would be far more accurate, since the type of controls who gave positive results would not be likely to be considered pregnant on clinical examination and these results were obtained as early as four and one-half weeks after the first day of the last menstrual period; but, on the other hand, only thirty-five positive results were found in forty-eight cases. From the data available on the occurrence of ovarian and anterior pituitary hormones in the blood and in urine, it would seem that they are to be found in very much greater concentration in morning specimens of urine than in the circulating blood.

SUMMARY

The reactions found in the genital organs of immature white mice following the injection of blood serum from pregnant and nonpregnant patients may be classified in three groups, those attributed to the effects of a hormone from the anterior pituitary gland being considered the most important.

One hundred patients were examined. Forty-eight represented normal pregnancies, and of these two gave negative results, eleven showed the presence of ovarian hormone alone, and thirty-five were positive for anterior pituitary substance. Of fifty-two controls, two patients showed ovarian hormone, and six anterior pituitary hormone. Of the latter, four were patients with either an operative or a radiation castration, and two had a functional amenorrhea.

15. Evans, H. M., and Simpson, M. E.: Antagonism of Growth and Sex Hormones of the Anterior Hypophysis, J. A. M. A. **91**: 1337 (Nov. 3) 1928.
16. Louria, H. W., and Rosenzweig, Maxwell: The Aschheim-Zondek Hormone Test for Pregnancy, J. A. M. A. **91**: 1988 (Dec. 22) 1928.
17. Siddall, A. C.: A Suggested Test for Pregnancy, J. A. M. A. **90**: 380 (Feb. 4) 1928; The Hormone Test for Pregnancy, ibid. **91**: 779 (Sept. 15) 1928.

CAVERNOUS HEMANGIOMA OF THE VERTEBRAE *

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Cavernous hemangioma of the vertebrae presents a characteristic roentgenologic picture which can be readily diagnosed, and yet, of the ten cases reported which produced spinal cord symptoms, none were diagnosed either before necropsy or at operation. It is for this reason that we present a typical case of cavernous hemangioma of the vertebrae with compression of the cord. The patient is moreover, to our knowledge, the second to have been successfully operated on.

REPORT OF CASE

Hemangioma of the third, fifth and sixth dorsal vertebrae with compression of the spinal cord. Laminectomy. Roentgen therapy. Marked improvement.

History.—Mrs. S. M., a Jewish housewife, aged 62, referred by Drs. Peter Bassoe and D. B. Rotman of Chicago, was admitted to the Albert Merritt Billings Hospital, Nov. 12, 1928, with an irrelevant past and family history. Until about ten months before admission she had been perfectly well, when one day she suddenly fell while walking. She was unable to arise and when helped to her feet was unable to walk. She also suffered from some pain on the dorsum of the left foot at this time. She remained in bed and in a chair for two weeks subsequently and was then able to walk without any difficulty. There were no residual symptoms apparent to the patient. She continued to be all right until about two and a half months later when, on getting out of bed in the morning, she was again unable to walk. This condition improved somewhat shortly afterward, but ever since the second attack she had had difficulty in walking, which persisted and increased.

About seven months after the onset she began to complain of a tight squeezing sensation about the abdomen at the level of the umbilicus, and pain in the lower part of the abdomen. At this time she was seen by Drs. Bassoe and Rotman, who made a diagnosis of tumor of the spinal cord. However, the patient was not satisfied and continued seeing different physicians. The pain continued to increase and a lumbar puncture done nine months after the onset caused severe pain about the upper portion of the abdomen; since then the pain had continued to be very severe at times. There was no block of the spinal fluid at this time, although the total protein was markedly increased. The cells were normal in number. About two weeks later, the patient became troubled with urinary frequency and incontinence. She stated also that her bowels had become badly constipated a short time before.

Examination.—The patient was obese. The general physical examination on admission was entirely negative, except that the abdomen was unusually rounded and large. There seemed to be marked atrophy of the musculature of the abdominal wall.

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Neurologic examination showed that the cranial nerves were normal. A band of hypesthesia to tactile stimuli about 7 cm. wide was found, the lower margin of which was about 2 cm. above the umbilicus. There was a narrow area of hyperthermesthesia and hyperalgesia immediately above this and also on the anterior surface of the upper two thirds of the left thigh. There was no other impairment of cutaneous sensation. There was marked loss of sense of position in both feet and legs. There was no impairment of two point or vibratory sense.

Examination of motor function revealed the upper extremities to be uninvolved, while the lower extremities showed a marked loss in strength in all muscle groups, especially the flexors.

The abdominal reflexes were all absent. The patellar and achilles tendon reflexes were hyperactive and equal. At times an ankle and patellar clonus was demonstrable on the left side. All pathologic toe signs (Babinski, Oppenheim, Chaddock and Gordon) showed bilateral extension of the great toe. The patient was barely able to maintain her weight in the standing position, swayed markedly, and was unable to walk alone. When she was supported, the gait was both spastic and ataxic.

In doing a Queckenstedt test it was found that the cerebrospinal pressure did not rise on jugular compression.

The roentgenogram of the spine (fig. 1) revealed a peculiar and, as we have since learned, typical picture. As can be seen, the bodies of the third, fifth and sixth thoracic vertebrae present a distinct striated appearance. Considerable absorption of bone is evident between areas of increased density. The lateral view (fig. 2) shows even more clearly the same process involving the bodies and extending back into the arches. The pedicles of the fifth and sixth thoracic vertebrae can be seen to be very much broadened in addition to the mottling. It will also be noted that the posterior border of the vertebral bodies of the third, fifth and sixth is very indistinct as compared, for instance, with that of the fourth thoracic vertebra.

The roentgenologic picture was interpreted at the time as most probably due to metastatic tumor involving the bodies and arches of the third, fifth and sixth vertebrae. A thorough search did not reveal a primary tumor, however, and an operation to relieve the compression of the spinal cord was decided on.

Operation and Course.—Nov. 19, 1928, under ethylene and ether anesthesia, an incision from the fourth to the seventh thoracic spines was made (Bailey). The spines of the fifth, and sixth vertebrae were removed. The bone was very soft and bled furiously whenever cut. The laminae of the seventh vertebra were removed easily and the underlying dura appeared normal. However, on attempting to remove the laminae of the sixth vertebra, it was found to be impossible to introduce the rongeur about the bone because of the great increase in thickness and corresponding smallness of the spinal canal. A trench was cut through the laminae, and the bone removed by biting laterally with a pointed rongeur. After the dura had been exposed, the peridural tissue was found to be also exceedingly vascular. The bleeding was finally arrested and the dura opened; the cord was seen to be compressed by its surrounding hypertrophied walls to a small white nervelike structure about 4 mm. in diameter. It was also pushed sharply backward over the bodies of the fifth and sixth vertebrae. By this time the patient's systolic blood pressure had fallen to 58. Since cerebrospinal fluid came down freely from above and the canal opposite the third vertebra did not seem to be constricted, the wound was closed, the dura being left open.

Fig. 1.—Appearance after operation (the silver clips used to control the hemorrhage can be seen): The longtitudinal striation of the third, fifth and sixth thoracic vertebrae, as compared with the normal second, fourth and seventh vertebrae, is evident.

On being returned to her room the patient was given a hypodermoclysis of 1,500 cc. of Ringer's solution; shortly afterward the blood pressure returned to 106. Immediately following the operation the patient was unable to void and had to be catheterized; two days later she became incontinent. However, twelve days after the operation she had partially regained control of the bladder, and when discharged six days later had complete control over both bladder and bowels.

Following the operation the patient rapidly improved. The wound healed by primary intention. The hyperesthesia and hypesthesia soon disappeared and motor function soon improved. When she was discharged, eighteen days after operation, she did not have any pain or discomfort and was able to walk fairly well with support. The tendon reflexes were no longer hyperactive, although a bilateral positive Babinski reflex remained.

During the week prior to her discharge the patient received a full erythema dose of roentgen irradiation to the involved area in four divided doses. When last examined, Feb. 25, 1929, she was able to walk alone without spasticity.

Microscopic Examination.—The fragments of the spines and laminae removed at operation were fixed in a diluted "solution of formaldehyde-U. S. P." (1:10), decalcified, and embedded in paraffin. The sections were stained with hematoxylin and eosin, Mallory's aniline blue and Van Gieson's acid picrofuchsin.

Microscopically the tissue showed the characteristic picture of a cavernous hemangioma. Many of the intertrabecular spaces contained normal appearing myelogenous tissue, and the trabeculae about them were formed by what seemed to be normal bone. Many other spaces were completely filled with numerous large cavernous spaces containing erythrocytes (fig. 3). There was no myelogenous tissue to be found in these areas. Occasionally a few fat cells could be seen about nodules of these dilated blood vessels. The walls of the channels were lined by normal endothelium, which lay on a supporting connective tissue small in amount but very definite, as shown by the aniline blue preparations. About the bone of the trabeculae in the area involved by the angioma could be seen in many places large groups of osteoblasts, while in other areas large multinucleated osteoclasts were present. About the angiomatous tissue the bone showed necrotic change. The tissue had become homogeneous, lacking the ordinary fibrous appearance, and was stained deeply by eosin. The cells within the bone were shrunken and often absent, while the lacunae in which they were found were dilated to about twice the size seen in nonpathologic bone. In some sections, long bands of fibrocartilage with numerous spicules of newly formed bone projected from the sides.

As the material was from an operative case, only the laminae and spines could be examined. We are of course unable to describe the microscopic structure in the vertebral bodies. However, the roentgenogram (fig. 1) would lead one to conclude that the process in the arch is identical with that in the body.

COMMENT

Cavernous hemangioma of the vertebrae is an uncommon condition. Eleven cases, including the one presented here, which produced symptoms have been reported (Gerhardt,[1] Deetz,[2] Muthman and Kauf-

1. Gerhardt, D.: Über das Verhalten der Reflexe bei Querdurchtrennung des Rückenmarkes, Deutsche Ztschr. f. Nervenh. **6**: 127-136, 1895.
2. Deetz, R.: From a Report of Gesellschaft für Naturforscher und Heilkunde zu Dresden, meeting of March, 1901, München. med. Wchnschr. **48**: 1506, 1901.

mann,[3] Ribbert,[4] Trommer,[5] Gold,[6] Perman,[7] Makrycostas,[8] Ewing,[9] and Guillain, Décourt and Bertrand[10]). Sixteen cases in which angiomas of the vertebrae have been found at autopsy, but in which there were no symptoms relative to the lesion, have also been reported (twelve by Makrycostas and one each by Virchow,[11] Saltykow,[12] Pentmann[13] and Fibiger[14]).

Fig. 2.—Typical striated appearance of hemangioma of the vertebrae as compared with the normal body of the seventh thoracic vertebra below and the fourth above. The marked widening and mottling of the pedicles is also evident.

We do not wish to enter here into the controversy as to whether hemangiomas are neoplasms. Certainly they are benign tumors from a clinical standpoint. We feel that in many cases they must arise from congenital anomalies. The sixteen autopsies which revealed at least fifty-two angiomas of the vertebrae, all of them small, none producing symptoms and most of them in elderly persons, show that hemangiomatous nodules probably lie latent in the bone until some undetermined factor stimulates their growth. The existence of angioma of the liver in two cases (Ribbert[4] and Virchow[11]) and of the spleen in another (Perman[7]) is suggestive in this regard. Perman feels that a great many cases arise from the venous plexus in the anterior portion of the body of the vertebra as described by Hanson.[15] However, Makrycostas shows that in most of the latent cases the angiomatous nodule lies at the center of the body. In those cases which produce symptoms, the process is too extensive to give any information as to its point of origin.

Clinically our case presented the picture of compression of the spinal cord, as did ten of the eleven reported. The eleventh case was diagnosed ante mortem as Pott's disease of the fifth lumbar vertebra (Makrycostas), and perhaps it also presented the picture of a compression of the cauda equina; the author does not state. It is of interest to note that in the present case, in particular, and also in Perman's case, although the spinal cord was markedly reduced in size the anesthesia was not complete below the level of the lesion. In fact, there was very little anesthesia in our case except for a wide band at the seventh to ninth dorsal levels, and in Perman's case there was only a slight hypesthesia in the areas supplied by the sacral segments. Further, the fact that all sensory changes rapidly disappeared and that there has been a rapid return in motor function following decompression of the spinal cord, even though the cord had been compressed to only a fraction of its former size, leads one to wonder what the actual change in the cord might be. We are inclined to believe that the change in the size of a spinal cord which is compressed is due not to a diminution in the true nervous elements but rather to the squeezing of fluid from the tissue. It is well recognized that a compression of short duration rapidly improves if the pressure is relieved, while in those cases in which the condition has existed for a long time recovery is much less apt to occur. The difference in the size of the cord in the two types of cases is of no moment. In fact, function may be recovered more rapidly and completely in a cord that is markedly compressed for a short time, while it will not return in one much less compressed over a period of years. Certainly in an acute compression there can be no great change in the true nervous elements, although there is marked diminution in the volume of the cord.

Fig. 3.—The large, dilated, thin walled vascular channels within the bone. Absorption of bone is evident in the spicule at the left. A few remaining fat cells can be seen toward the upper right hand corner. Hematoxylin and eosin (× 60).

Of the eleven cases which produced symptoms none were diagnosed correctly either before operation or at necropsy, and yet in three of them (those reported by Perman, by Gold, and the present case) the appearance of the roentgenograms was identical. It is this point which should be emphasized. In the present instance it was realized that the roentgenogram presented an unusual and unfamiliar picture, and a diagnosis of

3. Muthman, A.: Über einem seltenen Fall von Gefässgeschwulst der Wirbelsäule, Virchows Arch. f. path Anat. **172:** 324-344, 1903. Kaufmann, E.: Lehrbuch der speziellen pathologischen Anatomie, p. 937, 1922.
4. Ribbert, H.: Kavernom eines Brustwirbelkörpers mit multiplen Kavernomen der Leber, Deutsche med. Wchnschr. **38:** 390, 1912.
5. Trommer, B.: Zur Lehre der Hämangiome der Wirbelsäule, Frankfurt. Ztschr. f. Path. **22:** 313-326, 1919-1920.
6. Gold, E.: Von den Wirbelveränderungen im Falle eines Hämangioms an der Dura spinalis, Arch. f. klin. Chir. **139:** 729-761, 1926.
7. Perman, E.: On Hemangiomas in the Spinal Cord, Acta. chir. Scandinav. **61:** 91-105, 1926.
8. Makrycostas, K.: Über das Wirbelangiom, -lipom und -osteom, Virchows Arch. f. path. Anat. **265:** 259-303, 1927.
9. Ewing, J.: Neoplastic Diseases, ed. 3, Philadelphia, W. B. Saunders Company, 1928, p. 249; personal communication to the authors.
10. Guillain, G.; Décourt, J., and Bertrand, J.: Compression médullaire par angiome vertébral, Ann. de méd. **23:** 5 (Jan.) 1928.
11. Virchow. Die krankhaften Geschwülste, 1862-1863, p. 373. Same case reported by Schmidt, M. B.: Pathologie der Knochensystems, Ergebn. d. allg. Path. u. path. Anat. **7:** 221, 1900-1901.
12. Saltykow, S.: Über das Angiom der Wirbelsäule, Verhandl. d. deutsch. path. Gesellsch. **13:** 370-374, 1909.
13. Pentmann, I.: Zur Lehre der Splenomegalie, Frankfurt. Ztschr. f. Path. **18:** 121-151, 1916.
14. Fibiger, J.: Cavernoma Corporis Vertebrae Lumbalis V, Beretning om de paa Universitetets Patologist-anatomiske Institut I tidsrummet 3. Sept. 1910-31 Dec. 1911. København, 1912, p. 24.
15. Hanson, R.: Anomalies, Deformities and Disease Conditions of Vertebrae During Their Different Stages of Development, Acta chir. Scandinav. **60:** 309-368, 1926.

metastatic neoplasm was made by a process of exclusion. We realize now that the picture of reduction in bone density between parallel vertical trabeculae which are increased in density is pathognomonic of angioma of the vertebrae.

Finally, it is to be emphasized that, a correct diagnosis having been made, the operation should be undertaken with full realization that a very difficult procedure is being attempted, and that thus far the mortality has been high. Four patients have been operated on (those of Perman; Gold; Guillain, Décourt and Bertrand, and the present one). Of these, two patients (operated on by Eiselsberg and Petit-Dutaillis) died a very short time after operation of the severe hemorrhage that occurred during the operation or into the spinal canal after closure of the wounds. Both the other two who survived bled profusely, and we know of one other unpublished case [16] in which death occurred from hemorrhage before the spinal cord was exposed. The bleeding is very difficult to control; bone wax is of little avail because of the nature of the bone, the trabeculae being widely separated and easily broken. Hemorrhage can be satisfactorily controlled only by the use of muscle-stamps and by suction on packs of wet cotton. Postoperatively in all the known cases shock and hemorrhage had resulted in a serious condition. The usual administration of fluids, heat, stimulants and, in three, blood transfusion was used and yet a 60 per cent mortality resulted. At autopsy in two instances it was found that the bleeding had not been completely controlled and a massive hemorrhage had occurred into the tissues.

CONCLUSIONS

1. Twenty-seven cases of hemangioma of the vertebrae including the one presented here have been reported in the literature. Eleven of these caused clinical symptoms; sixteen were found at autopsy without antemortem indication of their presence.
2. The clinical symptoms were those of compression of the spinal cord in ten of eleven cases.
3. The roentgenograms are characteristic.
4. The pathologic process consists of (*a*) numerous groups of cavernous vascular channels, and (*b*) absorption and deposition of bone.
5. The only treatment of any avail is laminectomy.
6. The operation is difficult and may be fatal because of profuse hemorrhage.

16. This case has since been briefly mentioned by Globus, J. H., and Doshay, L. J.: Surg. Gynec. Obst. **48**: 345-367, 1929, table 5, case 7.

Jaundice in Portal Cirrhosis.—There is marked confusion in the literature regarding the occurrence of jaundice in portal cirrhosis. Thus Mayo says, "Jaundice is seldom present and only as a terminal symptom"; Rolleston states that "jaundice is not a prominent feature in portal cirrhosis, but it is met with at some time in the course of the disease, as shown by statistics, in more than one third of the cases," and one reads in Nelson that "ordinarily no definite jaundice is observed throughout the entire course of the disease." Rowntree, in pointing out the marked difficulties of accurate classification of the cirrhoses, says, "Jaundice, although ordinarily a symbol of biliary cirrhosis, may occur in any type." Mills, in emphasizing that the biliary and portal types frequently overlap, states that "only about 65 per cent of the typically portal type actually do show fluid in the abdomen, and jaundice is not uncommon." Nissen found that jaundice occurred in forty-four of seventy-seven cases of alcoholic cirrhosis which he studied, a figure (57 per cent) more nearly approaching that of the present report (50 per cent). —King, R. B.: The Blood Picture in Portal Cirrhosis of the Liver, *New England J. Med.*, March 7, 1929.

LOOSE BODY UNDER THE EXTERNAL SEMILUNAR CARTILAGE OF THE KNEE *

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In 1923, I [1] reported a case of loose body under the external semilunar cartilage of the knee, cited here as case 1. Since then I have had one more similar experience. In the literature at my disposal I cannot find any mention of this condition and a knowledge of it seems important.

It is extremely trying for the surgeon to open the knee in search of a loose body which is definitely known to be present and which is well visible in all roentgenograms and then fail to find it. Able surgeons have been known to fail in locating and removing a loose body. To open a knee joint is always an operation of magnitude and not to succeed in accomplishing the desired

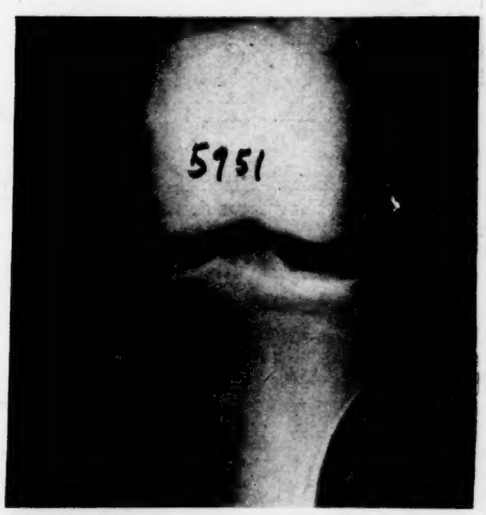

Fig. 1.—Loose body lying within the right knee joint above the outer tuberosity of the tibia. Picture reversed.

object is a surgical disaster. The condition here cited may, or may not, be excessively rare. In my practice it occurred two times in about 150 operations for internal derangement of the knee.

In removing the loose body it was not necessary to injure the external semilunar cartilage or its attachments. In the first case the loose body could quite easily be "swept out" with the improvised instrument to be mentioned later. In the second case, this method failed and the loose body was "milked out" by pressing on the cartilage and grasping the body when it presented below the edge of the semilunar cartilage.

In the cadaver, one can easily ascertain that there is a considerable amount of room under the external semilunar cartilage. This structure, of course, varies in size and shape within limits in different individuals. In some cadavers it covers more of the articular surface of the tibial tuberosity than it does in others. In one cadaver I was able to place an ordinary penny (1 cent, U. S.) under this cartilage so that the coin was completely hidden. An ordinary button (one-half inch by one-eighth inch) can, in the cadaver, be so thoroughly concealed that the sickle-formed knifelike

* Read before the Minnesota Academy of Medicine, Nov. 14, 1928.
1. Geist, E. S.: S. Clin. North America **3**: 1401 (Oct.) 1923.

edge of this cartilage is not in the least lifted up from the articular cartilage covering the upper end of the tibia.

REPORT OF CASES

CASE 1 (previously reported[1]).—A man, aged 29, sprained his right knee thirteen years before examination. A plaster cast

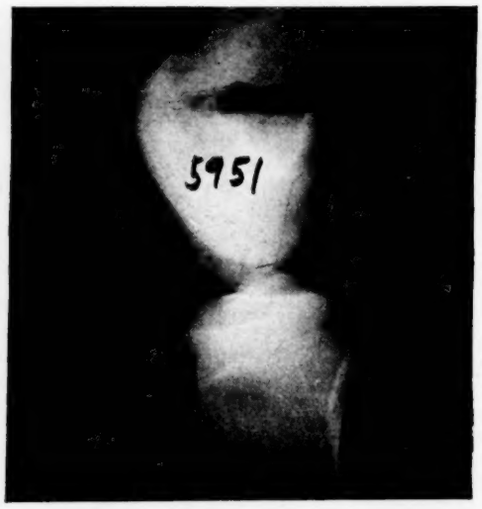

Fig. 2.—Lateral view of knee. Loose body in same position as in figure 1.

was put on for two months. Since then, he had not had any particular trouble, except for some occasional "weakness," until about one year previously, when he said that he sprained his knee again. Six weeks before he consulted me, the patient suddenly "dislocated" his knee while lying beneath his automobile, having some soreness for a few days following. During the next six weeks the patient had three further similar attacks. On examination a slight amount of effusion and limited motion were noted; otherwise the knee was normal. Roentgenograms (figs. 1 and 2) disclosed a loose body lying within the knee joint immediately above the outer tuberosity of the tibia. Numerous roentgenograms were made at different times, all of them disclosing the loose body in exactly the same posi-

Fig. 3.—Loose body lying within the left knee joint above the outer tuberosity of the tibia. Picture reversed.

tion as here shown. A roentgenogram taken immediately before the operation showed that it had not changed its position. A small curved Jones incision was made on the outer side of the patella. It was expected that the finding of this loose piece of bone would be a simple and easy matter and that the loose body would present itself as soon as the joint was entered. It was further expected that the body was pedunculated or attached in some manner to its surroundings, as various roentgenograms taken at different times did not show any change in its position. When the joint was opened a loose body could not be seen. The incision was enlarged and the joint was explored as thoroughly as possible without the desired abnormal structure being located. Before desisting and closing the joint, I bent a stout piece of wire on itself at its end in hooklike fashion, and by means of this was able to explore under the external semilunar cartilage. This dislodged the loose body, which up to that time had been absolutely concealed and covered by the cartilage. The usual closure was made and healing was uneventful.

CASE 2.—A woman, aged 24, while playing golf, felt something "give way" in the left knee, causing much pain. This was followed by effusion. A few days' rest in bed seemed to clear up the trouble. Five months later the patient had a stereotyped attack of locking for which she consulted me. At that time roentgenograms (figs. 3 and 4) showed a typical loose body lying within the knee joint above the external tuberosity of the tibia. Following this, numerous roentgenograms were made at different times. None of them showed any change in the position of the loose body. On account of the fact that displacement had not occurred and in view of my experience in the first case, I felt that here, too, I might be dealing with a loose body situated under the external semilunar cartilage.

Fig. 4.—Lateral view of knee. Loose body in same position as in figure 3.

The knee was opened on the outer side of the patella by means of a small Jones incision and since the body did not immediately come to view, a search was forthwith made under the external semilunar cartilage. The loose body was found under the cartilage, lying completely concealed. It was easily removed by "milking" it out without disturbing the attachments of the cartilage. It was not attached.

CONCLUSIONS

1. These cases, doubtless, were examples of osteochondritis dissecans. No search was made to locate the area from which the loose bodies had been extruded.

2. Loose joint bodies can find lodgment under the external semilunar cartilage and can be completely hidden by it and not seen when the joint is entered in the usual manner.

3. No attempt is made here to explain the mechanism by which these loose bodies find lodgment under the external semilunar cartilage, or to explain the symptoms.

4. In the cadaver there is enough free space situated between the external semilunar cartilage and the upper tibial surface completely to hide round, flat, smooth objects, such as buttons or coins, larger than those loose bodies found in the cases here cited.

PROPER SHOEING OF THE CHILD

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The human adult foot can hardly be referred to as a thing of beauty; yet in the early months of its existence it is certainly classified by every one as among the daintiest and most attractice portions of the baby's anatomy. The abuse of the human foot starts early in life largely through the sacrifice of utility and function to the esthetic.

Two axioms which might well be applied to many of the civilized races are:

1. Shoes are made to sell and not to wear.
2. The public wants what it wants and not what it needs.

Fig. 1.—Bones in the foot of an infant at age of 1 week.

Great events which test out physical fitness are apt to bring to light certain grave deficiencies. In some localities in this country, practically 50 per cent of the men examined for service in the recent war were declared physically unfit, on account of flatfoot. The human foot in the adult strikes the ground every 5 feet, or 1,000 times in a mile. The average marching distance of the soldier is 15 miles a day; hence the deductive importance of properly fitting shoes which allow unrestrained function.

The conformation of the baby's foot, with its well proportioned shape, softness and pliability, does not give any conception of real bony structure. This portion of the anatomy is endowed with few bones in the early months of life (fig. 1), the efforts of nature being spent on the parts needing stabilization for early use. At birth, only two bones of the tarsus are found possessing ossification centers, with the cuboid appearing in about 50 per cent of the cases. The arch of the foot is present at birth, but it is concealed by the large amount of plantar fat. If an impression is taken of the sole of the foot of a new-born child, one gets the impression of flatfoot. In reality, the arch is relatively higher than in the adult, as the space under the arch is filled with a large fat pad, which in early weight bearing assumes the rôle later taken up by the plantar fascia and the leg muscles.

Fig. 2.—Paper bag shoe to be worn by infant learning to walk.

Babies are essentially alike in their gait. They set the feet well apart with the toes abducted to broaden their base and thus to stabilize themselves. Their actual tread is essentially the same, and this does not become individualized until the age of 6 years. At this age, it is developed into a gait and tread acquired in youth, which is carried into adult life.

Fig. 3.—Appearance of foot in a properly fitted shoe.

It is possible to recognize a person by his gait. The shoes that are worn play an extremely important rôle in the development of this individual characteristic. The foot statics and gait are assumed which are the easiest and most comfortable for locomotion; hence the importance of proper education in one's early life.

It is safe to say that no part of the human body is the recipient of so much abuse to satisfy vanity as is the human foot. The average adult is extremely self-conscious of the bare foot, and he exposes it with a great deal of hesitancy, realizing full well that the distorted toes, corns and bunions reflect anything but credit to himself. It is obvious that parents should be educated not only with regard to the proper type of shoe to be worn by the child in early life but also in an intelligent understanding of its construction, and of the reasons why the growing foot should be respected in its anatomic development. On whom should this duty fall but the physician?

Fig. 4.—Effect of shoes that are too short, showing beginning flexion deformity.

In the act of walking, the toe strikes the ground first only in theory; in practice, it is the heel that first strikes the ground. At the end of the first year

in life when the average child has defined in its mind the ability to walk, the muscles of the foot and lower leg develop rapidly. This fact is expressed in the young child, who is observed continually exhibiting his prowess by raising on his toes, and it follows that this

Fig. 5.—Moccasin toe and turned shoe.

freedom of action should never be inhibited by a tight fitting, stiff soled foot covering.

The first shoe (fig. 2) should emulate a paper bag, possessing just enough shape to make it possible to designate it as a shoe. Its material should be soft white kid with a flexible unresisting sole, with a draw string of tape at the top. Its function should simply be that of a protective covering. Between the ages of 2 and 5, the child should have something a little more substantial as a protection.

Fig. 6.—Shoe worn by a child 100 years ago.

THE IDEAL SHOE

There are seven vital and essential points to be incorporated in what might be termed the "ideal seven point shoe":

1. *Breadth of the Toe.*—The shoe should be sufficiently broad to allow the toes to assume a natural uncompressed weight-bearing position (fig. 3).

2. *Length.*—There is a natural tendency for store salesmen to sell shoes too short for the rapidly growing foot. Few children at this age ever wear out their shoes, but they do outgrow them and even the slightest pressure against the great toe causes in time a tendency to flexion deformity (fig. 4). All shoes should be at least one-half inch longer than the weight-bearing foot. This fact can be determined only by taking a tracing of the weight-bearing bare foot, and laying the shoe on the tracing.

3. *Depth and Fulness of the Toe.*—This one point shows the least abuse of any, in the modern child's shoe. The moccasin toe and the turned shoe have corrected this abuse, as shown in figure 5. Figure 6 shows a shoe worn by a child 100 years ago.

4. *Close Fitting Well Shaped Heel, Tapering at the Top to Fit the Natural Conformation of the Os Calcis.*—The heel formed by the two quarters of the shoe should be the only part of its construction to fit snugly. The os calcis is sparsely covered with soft tissue and presents a firm bony resistance to pressure.

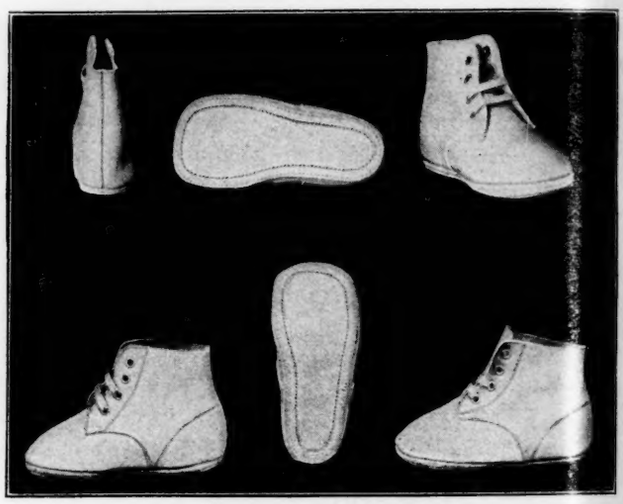

Fig. 7.—Ideal shoe.

5. *Depth from the Vamp at the Dorsum of the Foot over the Midtarsus to the Sole.*—This without doubt is a much abused essential point in shoe construction. No doubt, it is the result of sacrificing utility and comfort to vanity. Traditional fashion attempts to express beauty in the long vamp and tapering toe of the modern shoe. The normal foot in the side view has a distinct convex curve over the tarsus on the dorsum of the foot, in a line running from the anterior fold of the ankle to the base of the toes. In most of the modern shoes this line is straight. Depth and fulness are necessary here, not only to accommodate the normal fulness in the contour of the foot but also to allow freedom of action in foot mechanics, in raising on the toes in the act of walking. There must be a lack of constriction at this point to allow a proper bearing and leverage of the toes. This fact is especially important in the growing foot of the child.

6. *Broad Flexible Sole, with a Straight Outside Bearing from the Tip of the Little Toe to the Width of the Heel.*—The natural weight bearing should fall on the straight outside of the foot, with the feet parallel (Fig. 7). For this reason, there should not be a narrowing of the sole at the counter.

7. Height of the Heel.—Starting with the "paper bag shoe," up to the age of 3½ years, the child's shoe should not have a heel any thicker than the sole. From 3½ years up to 5 years, the heel should be twice as thick as the sole.

One would appear presumptuous, and perhaps a heretic to tradition, did he suggest a change in the military standing position of the feet; yet if one

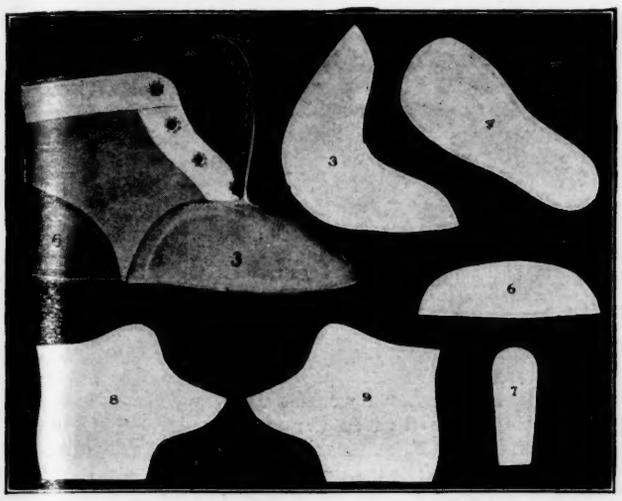

Fig. 8.—Patterns of the various parts of a baby's shoe: 3, vamp; 4, sole; 6, counter; 7, tongue; 8, 9, quarter.

analyzes the foot statics in early Greek statuary, one finds the standing position always with the feet parallel.

With advance in age there is a natural tendency to increase in weight with a consequent shifting of body mechanics. One finds the individual settling in the pelvis with resultant broadening of the base to stabilize body weight. In the present and past generations, in our childhood, we were all taught to toe out. We have held to that tradition, doing so at the present time, even though we realize the fallacy of it and the dire results in foot mechanics. Drastic educational movements are carried out along the lines of health and eradication of disease, but there is failure in material ways to teach the individual how to maintain normal balance. The change of fashion and style is responsible for bringing about many of the abuses of the body mechanics.

The recent war brought forth in a rather material way the necessity of proper care of the feet, and has tended to change the style of men's shoes radically. If the difficulties encountered in the recent war are to be averted and eliminated for future generations, parents must be educated to the type of footwear proper for the early growing period of the child.

Figure 8 shows patterns of the various parts that enter into the make-up of a baby's shoe.

43 Bay State Road.

Favus.—From the standpoint of public health, favus is one of the most important of the mycotic or fungus infections, because of its contagiousness and its chronicity. Routine examination for *Achorion schönleinii* in stubborn scalp conditions, sometimes mistaken for seborrheic dermatitis or ordinary ringworm (tinea capitis), would probably bring to light many cases that go undiagnosed. This statement is especially applicable to the country districts where favus is more common than in the large cities.—Tobias, Norman: Favus of the Scalp, *J. Missouri M. A.*, May, 1929.

PITUITARY TUMOR WITH FULMINATING SYMPTOMS

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Attending Physician, Jewish Hospital; Assistant Professor of Medicine, Cincinnati General Hospital
CINCINNATI

This case is reported because of the unusual rapidity with which the symptoms developed and their extraordinary severity, leading to a fatal termination.

REPORT OF CASE

Onset.—E. S., a white woman, aged 63, first complained of symptoms on March 12, 1927, consisting chiefly of nausea and terrific pain over the entire head. The patient was perfectly well in every way on March 11. At 5 a. m. on the 12th, she awakened with a terrific pain in the temporal part of the head, extending over the eyes. It was extremely severe and different from any other previous headaches, associated with nausea and followed within two hours by vomiting. She found it impossible to retain any food that day. The extreme retching increased the pain in the head markedly. There was noticeable drowsiness the entire day. Codeine sulphate, one-half grain (32 mg.), slightly relieved the headache and somewhat controlled the nausea. No organic disturbances on the part of the nervous system were noted at this time. The heart and lungs did not show anything remarkable.

Family History.—The patient was married and had two children living and well; one son had died in an accident. One sister died of tuberculosis, and another sister died from an unknown cause. One brother died of paresis, one of diabetes, one following an operation on the prostate gland, and one of cancer. Two brothers and one sister were living. One brother had frequent episodes of manic depressive psychosis (chiefly depressions). Familial otosclerosis was marked in most of the brothers and sisters. There had been two epileptic children born to two members of the family.

Fig. 1.—The sella turcica as it appeared in February, 1925.

Past History.—As a child, the patient had had a right apical tuberculosis which was satisfactorily cured. This was the only serious disease ever contracted. The patient's life, however, had been marked by frequent attacks of mental depression, often extending over months. These attacks had begun shortly after adolescence, but they had disappeared five years before the present complaint. During such attacks the patient was quite helpless, was very weak physically, and ate and slept very little. The attacks seemed amenable to change of scene

and climate. The patient had never been known to perspire, and at least on one occasion had developed rather alarming circulatory symptoms during extremely hot weather, when it became necessary to apply ice over the entire body. During a clinical investigation the patient at one time was placed in a cabinet, the temperature of which was elevated to 120 degrees (?), without any evidence of perspiration. There had always been a mottling of the skin of the forearms. Repeated eye examinations had been negative except for the common optical errors. Two years previous to the present illness a roentgenogram of the skull, taken because of symptoms of sinus disease, showed a widening of the sella turcica which was reported as abnormal by the roentgenologist. Exhaustive examination at this time failed to reveal any evidence of intracranial disorder. On close questioning the patient stated that two months prior to the present illness she had had disturbed vision which she explained as feeling as though a veil were over her eyes which caused her to close them; she consulted a renowned ophthalmologist, who did not find any evidence of organic ocular disturbance.

Course of Illness.—The patient spent a most uncomfortable day and night and awoke the following morning, March 13,

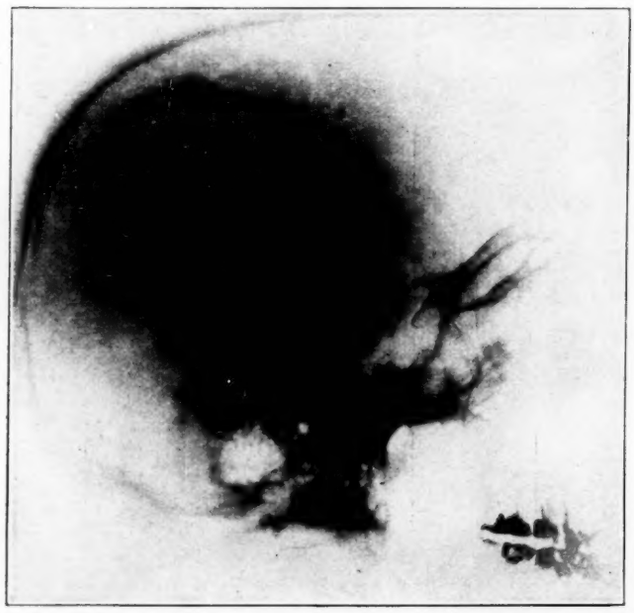


Fig. 2.—Appearance two years later in March, 1927.

with inability to raise her right eyelid, and with marked diminution of vision. The headache was slightly better and likewise the nausea; the temperature was normal, but there was marked weakness. The neurologic examination at this time did not show anything of interest. She was examined by Dr. Derrick T. Vail, who made the following observations:

By the motility test, the right eye was shown to have third nerve palsy, and partial palsy in the sixth nerve. In the left eye there was ptosis, mydriasis, and loss of inward, upward and downward movements. Exophthalmoscopic examination showed the right and left fundi entirely normal. There was no optic nerve swelling, and no hemorrhage in the fundus. The fundi were normal and alike.

The patient was removed to the hospital, where roentgen examination of the head revealed the following conditions: The skull presented an ill defined sella turcica. The posterior clinoid processes were eroded. The meningeal grooves were prominent. All nasal accessory sinuses were clear with the exception of the sphenoid.

It will be noted that these observations correspond closely with those noted two years previously when there were no intracranial symptoms.

During the afternoon of the second day, March 13, the patient was examined neurologically by Dr. David I. Wolfstein, who did not find any symptoms or signs other than the eye conditions described by Dr. Vail.

Spinal puncture done at this time showed clear fluid not under increased pressure (?). The cell count was 9 to the high power field. There was no relief of the headache following puncture, or of the backache which had started two hours previously, unassociated with opisthotonos. The mentality was not clouded but there was a mental hebetude. Following the spinal puncture the persistent headache was replaced by paroxysmal headaches of a severe nature. The patient took fluids without any trouble. When not disturbed she usually sank into heavy sleep. At no time was the pulse or respiration disturbed in either regularity or rate. The physical examination was repeatedly normal.

The following day, March 14, after an uncomfortable night the patient developed a temperature of 101 and seemed more lethargic, but could be aroused. There was no disturbance of mentality. The physical examination did not show any changes, and urinalyses were normal.

The consensus of those in attendance was that in all probability the patient had an atypical form of epidemic encephalitis. The examination by Dr. Vail on this day showed the following changes: The pupil of the right eye measured 4.5 mm. and was fixed, of the left eye, 4.5 mm., and was nearly fixed (codeine?) and smaller than on the previous day. Examination for motility of the right eye showed complete paralysis of the third nerve and all its branches, and partial lack of abduction (sixth cranial nerve); of the left eye, partial ophthalmoplegia externa, and third nerve weakness.

The field appeared as on the previous day. There was no ocular congestion. The tension in the right eye was normal, but there was exquisite pain on deep pressure of the right orbit. The patient was extremely lethargic (?). The examination was affected in the sense that there was a lack of necessary concentration.

Examination of the nose by Dr. Samuel Iglauer showed a few dry crusts in the nostrils. After cocainization the middle turbinate was infracted. No pus or edema was noted on the sphenoid face of the right side. The septum was deflected to the left, so that the infraction was difficult on that side. However, the examination was also negative on that side.

In the course of the day the patient showed evidence of more alertness with lapses of freedom from headache, although the tendency to sleep most of the time was marked.

The neurologic examination on this day was as follows: The right eye was unchanged, with possibly slight improvement in ptosis; the disk was normal; in the left eye there was no third or sixth nerve involvement. The patient's mental state was not very responsive; she was a bit more lethargic, rather indifferent and easily fatigued. There was less subjective complaint, especially as to pain.

The fourth day, March 15, the patient spent a rather uncomfortable night with no marked changes in her general condition. The temperature remained around 101. The second spinal puncture at this time showed a persistence of the conditions noted before. During the early part of the day the patient seemed brighter and had less headache than on the previous day. Examination of the eyes at this time revealed the following: A clear view was obtained of the right optic disk. There was no swelling, congestion, or exudate. The left optic disk was the same as the right. The optic nerve was normal. There was no doubt that the sixth nerve on the left side was not paralyzed, but the patient would not rotate the left eye in any other direction. The ptosis was present only in the insomnia state.

There was a slight response of the left pupil to light. The right did not show any response to light. The patient seemed blind. Ophthalmoplegia externa of the left eye was more pronounced than the day before. There was partial third nerve palsy.

Two hours after the second spinal puncture the patient's temperature rose slightly, and there was an increased lethargy and mutterings of delirium. She was aroused with difficulty and could hardly collect her thoughts. Within an hour of this time the temperature rose to 104, and there was stertorous breathing. It was impossible to arouse the patient. The general physical condition had not shown marked changes. The diagnosis of probable brain tumor was concurred in by the physicians in attendance and immediate operation decided on.

REPORT OF THE OPERATION BY DR. MONT REID

Before the operation was begun, the patient was already comatose and had a temperature around 105. Very little ether anesthesia was required. A large bone flap was turned down on the right side, permitting an exposure of the frontal lobe and a large portion of the parietal lobes. This made it necessary to carry the incision forward to the eyebrow. The dura appeared normal; a large dural flap was turned down, exposing a rather tight brain and allowing the escape of a large amount of bloody fluid, which lay between the dura and the cortex. This was particularly noticeable when the frontal lobe was lifted up in order to expose the optic chiasm.

In this region there were several ounces of blood fluid. The veins in the cortex were much distended and contained dark blood, a condition that is usually a serious prognostic omen. When the fluid around the optic chiasm had been removed a tumor was seen behind the chiasm, which appeared to be about as large as a walnut. It was very vascular and gave the impression that it had ruptured, thus accounting for the great increase of bloody fluid.

With the curet a considerable portion of the tumor was removed. On account of the patient's poor condition, no attempt was made to remove all of it. The dura was sutured back in its place; the bone flap dropped back, and the scalp sutured with interrupted silk sutures. At the completion of the operation the patient was in about the same condition as in the beginning.

On histologic section, tissue from the tumor looked like that of a typical hypophyseal adenoma.

Immediately following the operation the patient's temperature rose to 107, and she died three hours later.

REPORT OF AUTOPSY BY DR. MORTIMER HERTZBERG

The body was embalmed. All intracranial tissues were rather firm. The cranial contents were removed through a surgical opening. Grossly, the brain did not show any abnormalities save for traumatic hemorrhages at the base in the vicinity of the sella. On removal of the brain and pituitary the sella was found to be broadened and flattened, especially on the right side. The clinoid processes showed evidence of atrophy. At the base of the sella and anteriorly in the midline was a small rounded cavity, approximately 0.5 cm. in diameter; this cavity contained a small mass of grayish gelatinous tissue.

The pituitary body was partially encapsulated, except where it had been subjected to surgical procedure. It was generally enlarged, measuring roughly 2.5 cm. in diameter, and was irregularly rounded. It was soft and very hemorrhagic in appearance.

Sections of the pituitary and curettings, removed at the time of operation, showed extensive hemorrhage and tissue necrosis, with small areas of undegenerated cells. In these areas the cells were of a rounded polyhedral type with central nuclei. No eosinophilia was found. The cells were arranged in cords and somewhat perivascularly. No tendency to formation of glands was observed, nor was any colloid found.

The gelatinous tissue found in the small cavity consisted of a loose vascular and edematous connective tissue with small fragments of bone and several small cavities lined with a low columnary to cuboidal epithelium in several layers. This tissue resembled the tissue from the nasal sinuses in a state of low grade inflammation.

A diagnosis was made of hemorrhagic and necrotic malignant hypophyseal adenoma eroding into the sphenoidal sinus.

COMMENT BY DR. D. T. VAIL, JR.

A reconstruction of this case, in view of the pathologic conditions found, reveals how difficult it would be to make a diagnosis of pituitary tumor. The clinical ophthalmic symptoms were at variance with the usual picture, so much so that there was nothing beyond the bilateral oculomotor nerve involvement to suggest pituitary disease. The field of vision test showed a lower horizontal hemianopia in the right eye, and a relative central scotoma in the left. There was no suggestion of a temporal field defect in either eye. The ophthalmoscope showed the optic nerve heads to be normal; there was no papilledema or atrophy. Papilledema does not go with pituitary disease and the onset here was too acute for atrophy. One would expect, however, with the acute signs of increased intracranial pressure here present, that papilledema would occur. It probably would have done so had the patient lived several days longer.

The oculomotor paralysis, complete in the right eye and partial in the left eye, is the keystone in the diagnostic structure. The third nerve is in close contact with the bone at the anterior clinoid process; it is also closely associated with the sixth nerve at the superior orbital fissure. The tremendous and rapid destruction of the sella turcica and clinoid processes was more marked on the right than on the left side, since the ophthalmoplegia was total only in the right eye and constituted the earliest sign.

The horizontal field defect in the right eye indicated pressure on the optic nerve directly from above and anterior to the chiasm; but why the left should not have shown some peripheral defect is a question that must remain unanswered. The patient was stuporous; therefore not too much reliance can be placed on the subjective test here.

The differential diagnosis, ophthalmologically speaking, lay between (1) epidemic encephalitis; (2) pituitary disease, and (3) sphenoidal disease in the form of an abscess that spread laterally, eroding the bone into the cranial cavity. One choice was about as good as another, and the problem was solved by roentgenography.

OBSERVATIONS MADE BY DAVID I. WOLFSTEIN

This unusual case developed with extreme headache, nausea and retching, these symptoms appearing very suddenly and intensely. There was no history of any previous organic nervous disturbance or of any visual disturbance, and it was only after the closest questioning that the patient made the statement that two months previous "she had noted that she had a feeling as if there were a veil before her eyes." However, at this time she had had a complete and careful examination of the eyes and nothing abnormal was discovered. The ocular paralysis (third nerve-ptosis-mydriasis) seemed to be confined to the right eye, with only a suspicion of external abducens involvement of the left eye, which undoubtedly disappeared subsequently but seemed to reappear in slight grade later on. Hemianopia was never present. There was a central scotoma of the left eye for which it was difficult to account.

The roentgenologic report of erosion in the sellar region was of course very significant, especially as Dr. Benjamin recalled that a roentgenogram made two years before had been similarly suggestive. There was, however, no record of this, and the fact was recalled somewhat later in the course of the disease.

In view of the extremely sudden onset, with headache, nausea, severe backache and, especially, the persistent temperature, and of the absolutely negative history as regards previous headache, visual disturbances of any kind or other organic involvement of intracranial nature, a tentative diagnosis of encephalitis was made. Factors strengthening this were the early appearance of lethargy and the symptoms already named, but I, as well as all of those who were studying the case, could not help but take into consideration the roentgenologic report of sellar erosion. Furthermore, there seemed to be a tendency on the part of the eye symptoms to show a sort of abatement of intensity; especially was this the case with the sixth nerve involve-

ment on the left side, as well as with the pupillary reactions.

A very significant statement of Dr. Vail's is that the patient "seemed blind," recalling another case of epidemic encephalitis in which, despite the absence of positive observations, the patient also "seemed blind." The patient was also seen by Professor Tilney, who concurred in the provisional diagnosis of encephalitis.

The case is worthy of report on account of its sudden onset, and the absence of all hypophyseal symptoms except the vague ones recalled by Dr. Benjamin, though later all of us were much impressed by the roentgenographic report, as already stated. Interesting also is the long history of periodic states of depression, not connected at any time with a suggestion of any underlying organic basis. The association of hypophyseal tumors with central scotoma, no hemianopia and paralytic manifestations on the part of the ocular nerves is also uncommon.

COMMENT BY THE AUTHOR

While brain tumors are known to be protean in their manifestation, the present case seems unusual from several standpoints. It is quite likely that the tumor was present two years previously when the roentgen examination revealed a widening of the sella turcica. There were, however, no untoward physical symptoms and it is altogether unlikely that one would venture a positive diagnosis on such roentgenographic observations alone.

The extreme suddenness with which the condition arose and progressed to its termination is certainly uncommon. In this instance a perfectly well person suffered headache and nausea, and became totally blind within thirty-six hours. One finds it difficult to refrain from asking the question, Did some of the functional symptoms, mentioned in the body of this report, from which the patient suffered from time to time, have any bearing on abnormalities in the pituitary gland which later developed tumor proportions?

19 West Eighth Street.

Hemophilia.—Legg cited the earliest cases of hemophilia from the writings of Albucasis, an Arabian author who lived in the eleventh or twelfth century. He noted that in a certain village there were men who developed uncontrollable hemorrhage following slight abrasions of the skin which often ended in death. Accidents occurring to the boys of this village also often terminated in fatal hemorrhage. Professor Virchow drew attention to the writings of a physician practicing in Augsburg in the beginning of the seventeenth century who described severe naval hemorrhages, bloody stools and epistaxis recurring in a young boy. In 1803, John Otto attracted the general attention of the medical profession to the clinical entity of hemophilia. He was the first to point out that it occurred in the male members of the family but was transmitted by the female. This phenomenon was later emphasized by Nasse in 1820 and subsequently referred to as his law. Weil and others called attention to the fact that sporadic cases (hémophile spontanée) also occurred in which there was no family history of previous bleeders. In a family of bleeders, however, the male may be a bleeder of the hemophiliac type and the female of the purpuric type. It is questionable whether hemophilia occurs more frequently in one country than in another. Of the entire number of hemophiliacs studied, Germany reports about 50 per cent, England 20 per cent, and France, the United States and Switzerland around 10 per cent each. It seems that hemophilia does not select any particular class, either racially or socially, although most of the cases described have been reported from the middle and lower classes.—Mathe, C. P., and Mitchell, V.: The Management of the True Bleeder in Urological Surgery, *J. Urology*, March, 1929.

Clinical Notes, Suggestions and New Instruments

A CASE OF RUPTURED EXTRA-UTERINE PREGNANCY TREATED BY AUTOTRANSFUSION

R. L. MAYNARD, M.D., AND W. T. REES, M.D.,
BURLINGTON, VT.

D. S., a white woman, aged 20, single, was admitted to the Mary Fletcher Hospital, Nov. 19, 1928, at 9 p. m., with a diagnosis of ruptured ectopic pregnancy. While in a store, November 17, the patient was seized with severe abdominal pain, collapsed and had to be assisted to her home. The pain was relieved and she slept well that night. The day of admission she was up and about but felt weak and tired. About 5 p. m., while sitting in a chair, she had another attack of severe abdominal pain and again collapsed. A physician was called, who sent her to the hospital. Her past history was unimportant, except for the birth of an illegitimate child in August, 1924. For the past month the patient had had considerable nausea, especially in the morning. The last menstrual period, October 4, had been normal. She had never had any previous attacks of right sided abdominal pain.

The patient was thin and very pale, and appeared acutely ill, She was rather restless and kept moving from side to side on the bed. Her breathing was rapid and shallow and her forehead was covered with beads of perspiration. The pupils were equal and slightly dilated and reacted. The lungs were clear and resonant. The heart was normal except for the rapid rate. The abdomen was slightly distended and somewhat rigid, especially in the lower right quadrant. Tenderness was not marked except to a moderate degree over the lower right side. There was some shifting dulness in the flanks. There was a slight bluish tinge about the umbilicus. Vaginal examination revealed a small tender mass low in the right side, some fulness in the fornices, and a slightly enlarged uterus. The blood pressure at this time was 110 systolic and 70 diastolic. The temperature was 98 and the pulse rate 120. The blood count showed red cells, 3,420,000; hemoglobin, 75, and white cells, 19,250, with polymorphonuclears, 71 per cent; lymphocytes, 26; mononuclears, 2, and eosinophils, 1. The urine was alkaline with a faint trace of albumin.

A diagnosis of ruptured ectopic pregnancy with intra-abdominal hemorrhage was made, and the patient was prepared for operation. Her condition rapidly became worse, and she was semicomatose when brought to the operating room. The blood pressure at this time could not be recorded and the pulse at the wrist was not perceptible.

Under very light ether anesthesia a low median section was made. A large amount of bright red blood was found in the abdominal cavity, and the right tube presented a small mass surrounded by adhesions from which there was a little oozing. Realizing that the death of the patient from loss of blood was imminent and that there was no suitable donor immediately available, it was decided to attempt the reinfusion of the blood in the abdominal cavity. This blood was removed and mixed with 75 cc. of sterile 2.5 per cent sodium citrate solution and the mixture strained through several layers of gauze to remove any clots. A vein at the elbow was exposed, and the citrated blood, warmed to body temperature, was slowly injected. About 700 cc. of blood was transfused. The response of the patient was remarkable; the pulse became strong, full and less rapid; her color improved, and she would have regained consciousness had not ether again been administered. The operation was now completed, the tube and contained mass being removed and the wound closed without drainage. The patient was returned to bed in very fair condition, with a pulse of 126 and of good quality. Her recovery was uneventful except for considerable vomiting, which was controlled by stomach washings. The temperature never rose above 100 F. A blood count, December 6, showed hemoglobin, 65; red cells, 2,960,000, and white cells, 4,200, with a normal differential count. The patient was discharged, December 8, having recovered with a moderate secondary anemia. After she returned home the anemia improved, so that two months later the patient appeared practically normal.

COMMENT

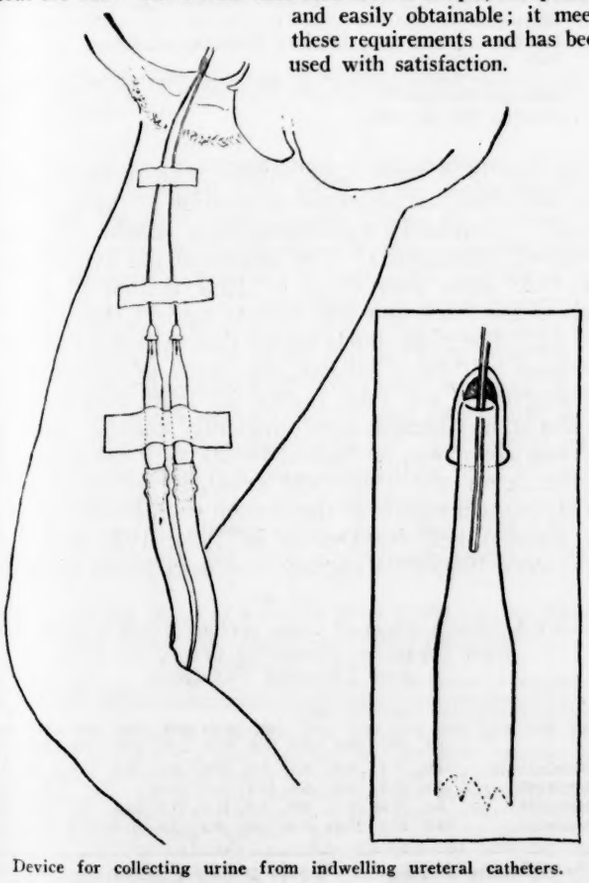
This case is presented to show the value of autotransfusion as a life saving procedure in cases of this character. It is essentially an emergency operation and is not unattended by certain dangers, especially that of introducing infection into the blood stream. Our patient, we believe, would have succumbed had time been spent in procuring a donor and doing the necessary blood matching.

289 College Street—62 Bradley Street.

DEVICE FOR COLLECTING URINE FROM INDWELLING URETERAL CATHETERS

R. M. LECOMTE, M.D., AND G. ROLAND GABLE, M.D.,
WASHINGTON, D. C.

In the use of indwelling ureteral catheters, the collection of urine as it escapes from the distal end presents certain difficulties. An appliance for this purpose should afford ready access to the catheter for frequent inspection as to continued patency, and for aspiration or the injection of medicaments into the kidney pelvis and should limit opportunity for external microbic contamination; at the same time it should not increase vesical or urethral irritation nor limit unduly the movements of the patient about the bed. The device described here is simple, inexpensive and easily obtainable; it meets these requirements and has been used with satisfaction.



Device for collecting urine from indwelling ureteral catheters.

The ureteral catheter is strapped to the thigh at a convenient distance from the external meatus, and one of the perforated rubber tips used with the Brown-Buerger type of cystoscope to prevent the escape of bladder contents when catheterizing the ureters is slipped over the end in a reverse position. The catheter end is then inserted into a glass connecting tube and the rubber tip passed over it so as to make a water tight joint; the glass connecting tube is then strapped to the thigh and connected by its distal end to rubber tubing, which is carried beneath the knee and into a bottle at the side of the bed.

The glass connecting tubes and rubber tips must, of course, be of such size as to admit of snug coaptation. It may be advisable to flare the end of the glass connecting tube slightly in order to make sure that the rubber tip will not slip off.

1801 Eye Street N.W.

Special Articles

DIPHTHERIA MORTALITY IN LARGE CITIES OF THE UNITED STATES IN 1928

SIXTH ANNUAL REPORT[1]

Data are herewith presented for the same eighty-one cities as appeared in the 1927 report (all having a population of more than a hundred thousand). The diphtheria deaths of each city have been reported to us by the respective health department. The rates are calculated on the basis of the population figures used in the article on typhoid.[2]

TABLE 1.—*Death Rates of Cities in New England States from Diphtheria (Including Croup) per Hundred Thousand Population*

	1928	1927	1926	1925	1920-1924	1915-1919	1910-1914	1905-1909	1900-1904	1895-1899	1890-1894
Fall River.....	3.0	14.3	13.7	11.6	25.5	23.6	24.0	34.4	50.1	43.8	46.9
New Haven.....	3.2	1.6	0.6	1.7	7.1	14.2	14.9	22.7	15.6	54.8	74.5
Lynn.....	6.6	19.1	12.5	8.7	17.0	17.8	17.2	21.7	38.0	44.0	49.0
Worcester.....	6.6	5.6	7.8	14.6	15.5	14.1	21.3	32.2	16.5	50.3	47.8
Cambridge.....	7.1	0.0	0.8	5.8	8.9	12.9	23.8	25.3	46.7	71.9	58.0
Boston.....	7.9	7.6*	6.9	12.7	20.2	26.3	20.0	26.2	53.7	83.9	112.2
Hartford.....	8.7	4.2	4.9	3.7	11.9	13.8	25.3	28.1	38.8	47.8	120.9
Providence.....	8.7	8.2	8.0	7.5	15.8	29.3	26.8	30.7	41.2	53.5	55.3
New Bedford.....	9.0*	15.6	11.1	7.5	16.5	17.0	20.9	22.6	25.1	53.6	20.0
Lowell.....	11.5†	16.0	5.3	3.6	16.7	23.5	20.6	31.0	59.3	44.3	36.4
Bridgeport.....	15.5‡	14.9	6.4	13.9	19.6	23.4	23.3	26.8	34.2	63.9	79.3
Springfield.....	16.0	12.2	4.1	4.2	15.4	24.9	19.1	31.3	29.6	51.3	68.2

* Population figures furnished by the health department: 121,629.
† Population figures furnished by the health department: 112,759.
‡ Population figures furnished by the health department: 155,000.

Of the twelve New England cities (table 1), eight had higher diphtheria death rates in 1928 than in 1927. The increase was especially pronounced in the case of three cities: Cambridge, which, after being, for four out of five times, in first or second place in this group, falls in 1928 to fifth place with a rate of 7.1; Hartford with a rate of 8.7 after rates below 5.0 since 1924, and Springfield with a rate of 16.0, which is a considerable increase even over its high 1927 rate (12.2), and far above its rates in 1925 and 1926, which were below 5.0. The 1928 rate for Springfield is about the same as its 1920-1924 average (15.4). The 1928 rates of all the other New England cities are well below their 1920-1924 averages. In each of the four cities in which the 1928 rates were lower than the 1927 rates, the decrease was large: Lowell (from 16.0 to 11.5), New Bedford (from 15.6 to 9.0), Lynn (from 19.1 to 6.6) and the striking reduction in Fall River (from 14.3 to 3.0). Fall River's lowest rate in the period 1924-1927 inclusive was 11.6 (in 1925), and its 1920-1924 average (25.5) was the highest in the New England group. The rate for the group as a whole (table 13) in 1928 (8.59) is a little lower than in 1927 (8.82) or in 1925 (9.25), but higher than in 1926 (6.75).

In eleven of the eighteen Middle Atlantic cities (table 2) there were lower diphtheria rates in 1928 than in 1927, the decrease being considerable in six

1. The preceding articles were published in THE JOURNAL, Sept. 20, 1924, p. 918; April 25, 1925, p. 1269; April 3, 1926, p. 1005; April 30, 1927, p. 1396; May 19, 1928, p. 1621.
2. Typhoid in the Large Cities of the United States in 1928, J. A. M. A. 92: 1674 (May 18) 1929.

instances: for Utica the rate fell from 29.2 in 1927 and 22.6 in 1926 to 1.0 in 1928; for Camden the 1928 rate of 13.3 is the first rate under 20 recorded in these summaries (the 1927 rate was 24.8); for Scranton the rate fell from 18.1 in 1927 to 7.6 in 1928; for Yonkers from 19.4 to 9.1; for Erie from 8.4 to 0.7, and for Pittsburgh from 17.4 to 11.6. Of the seven cities with 1928 rates higher than their 1927 rates, only three had large increases: Elizabeth (from 10.6 to 15.6), Jersey City (from 11.2 to 18.8), and Newark (from 13.3 to 20.0). The Jersey City 1928 rate (18.8) is about the same as the 1920-1924 average for that city (18.4). The Newark 1928 rate is far above that city's average both for 1920-1924 (9.7) and for 1915-1919 (14.6). The 1928 rate for the Middle Atlantic cities as a group (table 13) is below the rates for 1925 and 1927 (10.80 as against 11.46 and 11.75), but higher than the 1926 rate of 9.16.

TABLE 2.—*Death Rates of Cities in Middle Atlantic States from Diphtheria (Including Croup) per Hundred Thousand Population*

	1928	1927	1926	1925	1920-1924	1915-1919	1910-1914	1905-1909	1900-1904	1895-1899	1890-1894
Erie	0.7*	8.4	7.9	10.0	16.8	15.1	17.7	27.1	42.3	23.1†	
Utica	1.0	29.2	22.6								
Syracuse	2.0	1.5	1.6	2.7	22.9	12.9	16.6	17.4	17.7	31.1	55.4
Trenton	2.9	1.5	2.2	6.1	7.3	8.8	12.3	15.8	21.6	92.7‡	89.7‡
Rochester	3.6	6.5	9.7	16.4	16.9	12.7	22.1	32.4	32.3	45.9	96.6
Albany	5.0	10.9	4.9	7.6	12.8	10.4	20.0	31.6	26.9		
Reading	6.1	8.7	2.6	11.5	21.1	16.9	35.7	29.2	70.1	72.0	94.1
Scranton	7.6	18.1	7.7	13.4	12.3	22.1	23.4	....	....	77.8‡	48.6‡
Paterson	9.0	9.7	5.6	4.9	18.5	13.5	16.1	25.5	52.9	111.8	145.4
Yonkers	9.1	19.4	12.9	9.7	17.0	17.7	25.3				
New York	10.7	12.0	8.1	10.8	14.0	21.8	28.0	40.0	58.0	85.8	134.4
Philadelphia	11.1	10.8	13.5	15.9	16.7	22.7	24.6	34.1	50.0	100.6	119.4
Buffalo	11.3	10.7	5.3	5.8	24.0	27.3	22.0	18.4	24.8	53.3	60.9
Pittsburgh	11.6	17.4	9.3	9.2	20.1	22.3	29.3	20.4	36.9	32.9	86.4
Camden	13.3	24.8	26.0	21.0	20.3	23.2	38.8	48.9	52.6	98.8	194.0
Elizabeth	15.6#	10.6	12.8	8.3	19.2	19.3	14.8	51.7	42.4	60.5	79.3
Jersey City	18.8	11.2	10.1	13.6	18.4	21.0	23.2	32.6	57.9	85.4	108.6
Newark	20.0	13.3	4.6	9.3	9.7	14.6	23.3	30.1	46.7	79.1	110.4

* Population figures furnished by the health department: 133,000.
† Lacks data for 1895.
‡ Diphtheria deaths from Chapin's Municipal Sanitation.
# Population figures furnished by the health department: 115,333.

In the seven South Atlantic cities (table 3) a comparison of the 1928 rates and the 1927 rates shows four increases and three decreases. The largest increase is in Washington (from 4.4 to 8.1). Jacksonville and Baltimore have large decreases (from 7.2 to 3.5 and from 11.3 to 7.6). The highest rate in this group in 1928 (Washington's rate of 8.1) is lower than the corresponding rate in 1927 (Baltimore's rate of 11.3). The average for the group (table 13) is lower in 1928 (6.91) than the rates in 1925 and 1927 (7.46, 7.53) but higher than the rate for 1926 (6.38).

TABLE 3.—*Death Rates of Cities in South Atlantic States from Diphtheria (Including Croup) per Hundred Thousand Population*

	1928	1927	1926	1925	1920-1924	1915-1919	1910-1914	1905-1909	1900-1904	1895-1899	1890-1894
Norfolk	3.3	1.7	1.7	1.0	4.3	4.1	6.7	17.0			
Jacksonville	3.5	7.2	5.8								
Wilmington	6.2	4.8	9.7	20.2	11.6	15.2	18.0	27.8	50.9	84.9	83.8
Richmond	6.7	5.7	1.1	16.1	9.8	5.8	7.0	9.8	24.4	17.6	59.7
Atlanta	7.0	8.8	10.9	4.4	13.3	10.1	12.5	14.2	11.1	10.5	8.8
Baltimore	7.6	11.3	7.3	6.0	11.4	13.5	14.2	16.1	33.0	68.1	70.0
Washington	8.1	4.4	5.5	7.4	10.5	11.9	6.9	11.2	23.5	50.9	77.9

The group average for 1928 in the East North Central cities (table 13), on the other hand, is well below (11.29) the group average for 1926 (12.84) and for 1927 (13.28) but above the 1925 average (8.39). Of the fourteen cities in this group (table 4), nine had 1928 rates much smaller than those for 1927, in five cities the decrease amounting to at least four points (Cleveland's was largest, then Toledo, Columbus, Detroit, Milwaukee). The largest of the five increases in 1928 rates over those of 1927 is that of Akron, where the 1928 rate was 12.4 as against the 1927 rate of 5.2. The 1928 rate is higher than Akron's 1920-1924 average (10.4). Though the rates of Chicago and Youngstown are even higher in 1928 than in 1927, when the Chicago rate suddenly doubled and the Youngstown was multiplied by 20, they are still somewhat below the 1920-1924 averages for these cities. Youngstown stands at the bottom of the table in 1928, a position held by Detroit in 1924, 1926 and 1927. Detroit's 1920-1924 average was next to the highest in this group of cities. Detroit's 1928 rate (16.2), though the next to the highest among the East North Central cities, is nevertheless a great improvement over its rates for 1926 and 1927 (34.8 and 20.8). Canton and Grand Rapids are in the upper half of the group in 1928, as they were also in 1926 and 1927. Grand Rapids was in the upper half in 1924 and 1925, though its 1920-1924 average was the fourth highest in the group (19.6). Cleveland has the lowest rate (10.5) that it has attained since 1924, when its rate was 8.7.

TABLE 4.—*Death Rates of Cities in East North Central States from Diphtheria (Including Croup) per Hundred Thousand Population*

	1928	1927	1926	1925	1920-1924	1915-1919	1910-1914	1905-1909	1900-1904	1895-1899	1890-1894
Grand Rapids	0.0	1.9	3.2	4.5	19.6	13.5	20.0	26.6	17.2	32.4	99.2
Canton	1.7	0.9	1.8	5.6	17.5	15.1*					
Columbus	2.0	6.9	10.5	3.2	8.5	7.6	12.1	10.5	11.6	28.5	56.9
Toledo	2.9	8.2	8.5	9.0	22.4	14.1	25.4	20.4	56.8	34.6	89.3
Dayton	3.2	6.6	7.3	2.9	9.4	9.3	22.1	13.3	17.2	27.4	82.9
Flint	3.4	7.0	3.1	3.8	29.9	25.5	12.7	11.0	16.8	6.9	69.2
Indianapolis	5.2	7.7	6.0	6.7	11.7	21.4	13.5	13.3	15.9	36.4†	97.3‡
Milwaukee	6.4	10.4	9.8	11.6	11.4	19.8	27.8	26.4	22.7	51.7	116.2
Cincinnati	8.7	5.8	4.4	3.4	10.6	13.2	13.9	17.0	17.3	37.3	103.7
Cleveland	10.3	18.8	19.9	14.7	14.7	20.0	24.6	20.8	42.6	45.3	95.7
Akron	12.4#	5.2	3.0	2.4	10.4	18.9	27.8	21.8¶			
Chicago	14.6	14.1	7.3	8.0	17.5	31.2	37.9	27.0	33.9	69.7	117.3
Detroit	16.2	20.8	34.8	9.5	24.3	32.2	33.3	22.6	38.5	62.9	132.9
Youngstown	16.6	13.6	0.6	5.0	18.5	11.9	40.5	33.5	28.0	17.6	28.4§

* Lacks data for 1915.
† Diphtheria deaths from Chapin's Municipal Sanitation.
‡ Data for 1891-1894.
# Population figures furnished by the health department: 225,000.
¶ Data for 1909 only.
§ Data for 1893 and 1894.

TABLE 5.—*Death Rates of Cities in East South Central States from Diphtheria (Including Croup) per Hundred Thousand Population*

	1928	1927	1926	1925	1920-1924	1915-1919	1910-1914	1905-1909	1900-1904	1895-1899	1890-1894
Birmingham	4.0	7.4	2.8	5.8	5.3	7.2	8.3	6.2	13.4	16.5	26.3
Louisville	4.8	5.6	2.2	5.0	10.4	9.5	9.0	....	....	39.0*	49.6*†
Memphis	5.8	7.6	9.1	2.9	9.5	11.2	11.9	13.4	6.9	10.0	28.5
Nashville	15.0	12.3	20.4	6.6	8.0	8.9	7.3	10.3	13.9	30.1	28.4

* Diphtheria deaths from Chapin's Municipal Sanitation.
† Data for 1891-1894.

Three of the four East South Central cities (table 5) have lower rates in 1928 than in 1927. None of these

three cities have had rates above 10.0 in 1924 or since. Nashville, the fourth city, on the other hand, has in 1928 its third successive rate above 10.0, whereas its 1924 and 1925 rates were below 10.0, and likewise its five-year averages since 1910. The average for the group in 1928 (table 13) is lower (6.46) than in 1927 (7.61) or 1926 (6.82) but considerably higher than in 1925 (5.03). In 1925 the group average for the East South Central cities was the lowest of all the eight group averages, whereas ever since it has stood in third or fourth place (fourth in 1928).

TABLE 6.—*Death Rates of Cities in West North Central States from Diphtheria (Including Croup) per Hundred Thousand Population*

	1928	1927	1926	1925	1920-1924	1915-1919	1910-1914	1905-1909	1900-1904	1895-1899	1890-1894
Des Moines	0.6	4.0	8.2	11.4	15.1	16.6	15.1	23.8*			
Duluth	1.7	2.7	3.5	0.0	6.0	10.2	8.8	38.2	29.1	7.6	49.5
St. Paul†	1.7	2.0	8.1	13.4	17.5	20.7	31.4	31.1	27.9	43.3	75.4
Kansas City, Kan.	4.2	6.8	3.4	4.3	9.8	23.1	12.4‡				
Kansas City, Mo.	4.6	2.9	4.3	7.3	14.4	22.8	15.7‡				
Minneapolis	5.3	6.2	17.3	25.0	13.4	19.9	28.3	24.4	44.6	34.0	55.0
Omaha	5.8	3.6	4.2	11.8	22.9	35.8	15.8	24.5	20.5	28.2	82.9
St. Louis	9.1	8.6	13.1	11.2	16.1	24.4	23.7	19.4	43.3	62.9	67.7

* Data for 1909 only.
† Population figures furnished by the department of health: 298,000.
‡ Data for 1912-1914.

There are five decreases and three increases of rate in 1928 as compared with 1927 in the eight cities of the West North Central group (table 6). None of these shifts are very large, the greatest decreases being in Des Moines (from 4.0 to 0.6) and Kansas City, Kan. (from 6.8 to 4.2), and the only notable increase being in Omaha (from 3.6 to 5.8). St. Louis is at the foot of the list as in 1927, with a 1928 rate (9.1) slightly higher than the 1927 rate (8.6), but lower than the rates for 1925 or 1926 (11.2 and 13.1), and well below the 1920-1924 average (16.1). The group rate (table 13) for 1928 is a trifle lower than the 1927 rate (5.57 as against 5.59). But, whereas the 1927 rate was the lowest of all the group rates, the 1928 rate is next to the lowest, the first place being taken by the

TABLE 7.—*Death Rates of Cities in West South Central States from Diphtheria (Including Croup) per Hundred Thousand Population*

	1928	1927	1926	1925	1920-1924	1915-1919	1910-1914	1905-1909	1900-1904	1895-1899	1890-1894
Houston*	4.7	7.4	11.2	10.4	6.4	6.1	7.8	10.5	4.2†	2.4	1.8
Fort Worth	5.9	15.3	8.8	5.8	1.7‡	2.6#	2.6	2.8	5.4		
New Orleans	8.6	15.1	6.4	6.8	6.5	11.6	19.6	10.2	11.5	17.1	51.3
El Paso	9.3	1.8	1.8	8.6	20.0	17.6	29.2				
Tulsa	9.4	10.0	6.8	17.7	8.3¶						
Dallas	11.9	8.5	11.8	3.6	8.3	7.4	6.9	8.1	16.9	16.0	21.8
San Antonio	12.4	13.7	5.4	4.5	7.7	8.7	6.7	7.6	17.1	20.6	4.4
Oklahoma City	15.7§	11.4									

* Population figures furnished by the health department: 300,000.
† Data for 1900, 1901.
‡ Data for 1924 only.
# Lacks data for 1918 and 1919.
¶ Data for 1923, 1924.
§ Rate calculated from population figures for 1927: 140,000.

Mountain cities. It should be noticed that the 1925 and 1926 group rates for the West North Central cities were the highest and next to the highest of all the group rates.

The 1928 group rate (6.18) for the West South Central cities (table 13) is lower than the rates for 1925, 1926 or 1927, being only about half the latter (11.18). Five of the eight cities show 1928 rates (table 7) that are smaller than the 1927 rates, the most conspicuous of the decreases being those of Fort Worth (from 15.3 to 5.9) and New Orleans (from 15.1 to 8.6). On the other hand, in the three cities with

TABLE 8.—*Death Rates of Cities in Mountain and Pacific States from Diphtheria (Including Croup) per Hundred Thousand Population*

	1928	1927	1926	1925	1920-1924	1915-1919	1910-1914	1905-1909	1900-1904	1895-1899	1890-1894
Tacoma	0.0	4.7	17.0	18.2	12.4	7.7*					
Seattle	1.0	0.8	2.0	2.5	6.6	5.5	5.2	12.5	13.4†	27.2‡	
Portland, Ore.	3.0#	3.6	7.6	13.5	11.3	6.0	12.3	12.2	20.2		
San Francisco	3.4	3.6	6.4	6.6	23.0	17.0	9.2	14.4	44.2	21.6	54.8
Denver	4.4	7.9	10.5	15.7	23.2	6.7	10.2	20.8	29.6	27.3	130.2
Salt Lake City	5.1	14.0	15.1	13.7	12.5	14.5	15.1	34.2	46.0	14.8	56.7¶
Los Angeles	5.6§	7.0	6.2	6.2	14.4	7.1	7.5	15.3	25.4	35.8	46.0
San Diego	5.9	9.5	10.0	6.6	12.2	10.5	8.0	5.8	2.4		
Spokane	7.3	0.9	7.4	14.7	11.3	4.2	7.6	25.8	....	59.5‡	18.1
Oakland	10.2	10.1	7.3	5.1	18.8	8.1	10.3	16.1	29.1		

* Data for 1916-1919.
† Data for 1901-1904.
‡ Diphtheria deaths from Chapin's Municipal Sanitation.
# Population figures furnished by the health department: 336,163.
¶ Data for 1892-1894.
§ Population figures furnished by the health department: 1,400,000.

increased rates in 1928 the increases are all rather large. El Paso has a sudden increase from 1.8 to 9.3; in 1926 and 1927 its rate was among the ten lowest rates in the country. San Antonio and Oklahoma City have in 1928 their second successive year with a rate above 10.0. New Orleans and Fort Worth, which were at the foot of the table in 1927, hold second and third places at the head in 1928, their 1927 rates being abruptly higher than their rates in the years just preceding or succeeding.

Seven of the ten cities in the Mountain and Pacific group (table 8) have decreases of rate in 1928 as compared with 1927, the largest being in Salt Lake City (from 14.0 to 5.1), Tacoma (from 4.7 to 0.0), San Diego (from 9.5 to 5.9) and Denver (from 7.9 to 4.4). Tacoma, the only city in the country besides Grand Rapids to have had no diphtheria deaths during 1928, and one of four ever to have made such a record, had a rate of 4.7 in 1927, and the highest rates in this group in 1925 and 1926 (18.2 and 17.0) and a rate of 16.5 in 1924. Seattle, therefore, falls to second place in 1928, this being the first year since these summaries were started in which it has not stood at the head (it is the only Mountain city to have had a 1920-1924

TABLE 9.—*Ten Cities with Highest Diphtheria Death Rates for 1928*

Newark	20.0	Oklahoma City	15.7
Jersey City	18.8	Elizabeth	15.6
Youngstown	16.6	Bridgeport	15.5
Detroit	16.2	Nashville	15.0
Springfield, Mass.	16.0	Chicago	14.6

average under 10.0). Portland, San Francisco and Denver have had steadily declining rates since 1925. Salt Lake City's 1928 rate of 5.1 is about one third of that city's rates for the three preceding years and well below its 1920-1924 average of 12.5. The one large increase in this group is that of Spokane (from 0.9 to 7.3), which, second from the head in 1927, is second from the foot in 1928. Oakland is at the bottom of the table, with about the same rate as in 1927. The group average (table 13) for the Mountain and Pacific

cities has steadily declined since 1925, the 1928 rate being 4.67 as against 5.87 in 1927. Their 1928 rate is the lowest in the country, whereas from 1920-1924 the Pacific coast experienced diphtheria in epidemic prevalence.

TABLE 10.—*Eleven Cities with Lowest Diphtheria Death Rates for 1928*

Grand Rapids	0.0	Canton	1.7
Tacoma	0.0	Duluth	1.7
Des Moines	0.6	St. Paul	1.7
Erie	0.7	{Syracuse	2.0
Seattle	1.0	{Columbus	2.0
Utica	1.0		

Of the ten cities with highest diphtheria rates for 1928 (table 9), only one (Detroit) was on the corresponding list for 1927. Detroit's 1926 rate and its 1920-1923 average were likewise among the ten highest in the country. Bridgeport was on this list in 1924 and Nashville in 1926. None of the others on the 1928 list were on corresponding lists in the four preceding years or on the list of ten cities with the highest 1920-1923 averages. Camden, which had among the ten highest rates from 1924 to 1927, both inclusive, just escaped being included in 1928.

Of the eleven cities with the lowest diphtheria rates for 1928 (table 10), four were on the corresponding list in 1927 (Canton, Grand Rapids, Seattle and Syracuse), three in 1926 (Canton, Seattle, Syracuse), four in 1925 (Columbus, Duluth, Seattle and Syracuse), one in 1924 (Columbus), and one on the list of ten cities with lowest 1920-1923 averages (Seattle). In other words, six of the eleven cities with lowest 1928 rates had appeared before among the ten or eleven cities with lowest diphtheria rates. Two cities (Grand Rapids and Tacoma) had no diphtheria deaths during 1928; similar records were made by Cambridge in 1927 and Duluth in 1925. Tacoma was among the ten cities with highest diphtheria death rates in 1925 and 1926, and Grand Rapids among the ten cities with highest 1920-1923 averages. Incidentally, Tacoma reports for 1928 no deaths from either typhoid or diphtheria, the first of our cities to make such a record.

In 1928 among the eighty-one cities only one (Newark) had a diphtheria death rate of 20.0 (table 11), whereas in 1927 there were two such cities (Camden and Detroit). Rates of 10.0 and over occurred in 1928 in twenty-one cities, as against thirty-one in 1927. This is the lowest number of rates of 10.0 and over that has been recorded in these summaries, though it is almost the same as the 1926 number (twenty-two). Correspondingly, there are sixty cities with 1928 rates under 10.0, as against fifty in 1927 and fifty-eight in 1926.

TABLE 11.—*Number of Cities with Various Diphtheria Death Rates*

	Number of Cities	40 and Over	20 and Over	10 and Over	5 and Over	Under 5
1890-1894	61	50	57	58	59	2
1895-1899	63	34	52	50	62	1
1900-1904	65	21	45	61	63	2
1905-1909	69	3	41	66	68	1
1910-1914	75	1	34	59	74	1
1915-1919	77	0	23	58	74	3
1920-1924	78	0	14	58	76	2
1925	79	0	4	29	59	20
1926	80	0	4	22	55	25
1927	81	0	2	31	60	21
1928	81	0	1	21	53	28

Likewise the total rate (9.26) for seventy-eight of the cities in 1928 (table 12) is lower than in any previous year—considerably below the 1927 rate of 10.43 and slightly below the rates for 1925 and 1926 (9.65 and 9.40).

Every one of the eight geographic divisions (table 13) had a lower diphtheria death rate in 1928 than in 1927. Comparing their rates for the four years 1925-1928 inclusive, the lowest rate for each of the three Atlantic seaboard groups occurred in 1926, for the East North Central and East South Central groups in 1925, and for each of the three Western groups in 1928. The highest rate for each of five of the groups occurred in 1927, and in the sixth group (New England), while the 1925 rate was actually the highest, the 1927 rate was also high; in the West North Central and Mountain and Pacific cities there has been a consistent decline.

TABLE 12.—*Total Diphtheria Death Rate for Seventy-Eight Cities, 1923-1928* *

	Population	Diphtheria Deaths	Diphtheria Death Rate per 100,000
1923	29,970,602†	3,982†	13.25
1924	30,725,200	3,370	10.98
1925	32,010,310	3,093	9.65
1926	32,485,591	3,055	9.40
1927	33,093,423	3,451	10.43
1928	33,750,384	3,125	9.23

* Jacksonville, Oklahoma City and Utica are omitted from this summary because data for the full period are not available.
† Lacks data for Fort Worth.

TABLE 13.—*Total Diphtheria Death Rate per Hundred Thousand Population for Eighty-One Cities According to Geographic Divisions*

		1928		1927		1926	1925
	1928 Population	Diphtheria Deaths	Diphtheria Death Rate	Diphtheria Deaths	Diphtheria Death Rate	Diphtheria Death Rate	Diphtheria Death Rate
New England	2,548,088	219	8.59	224	8.82	6.75	9.25
Middle Atlantic	11,790,733	1,275	10.80	1,386	11.75	9.16	11.46
South Atlantic	2,285,300	158	6.91	169	7.53	6.38	7.46*
East North Central	8,512,300	961	11.29	1,105	13.28	12.84	8.39
East South Central	881,600	57	6.46	65	7.61	6.82	5.03
West North Central	2,602,800	145	5.57	141	5.59	10.04	12.50
West South Central	1,764,200	163	6.18	190	11.18	7.77†	7.40
Mountain and Pacific	3,750,233	175	4.67	206	5.87	7.20	8.19

* Lacks data for Jacksonville.
† Lacks data for Oklahoma City.

The lowest group rate in 1928 is the 4.67 of the Mountain and Pacific cities, the lowest rate recorded for any geographic division since 1925, when such rates were first given in these summaries. The second best 1928 rate (5.57) is that of the West North Central cities, which had the best of all the rates in 1927 (5.59) after having the highest and next to the highest rates in 1925 and 1926. The 1928 rates of the three groups of Southern cities all are between 6.0 and 7.0 (6.18, 6.46, 6.91), whereas in 1927 the South Atlantic and East South Central rates were 7.53 and 7.61, and the West South Central rate 11.18. The New England cities' rate for 1928 (8.59) is higher than any group rate except those of the Middle Atlantic and East North Central cities (10.80 and 11.29). The two latter groups also had the highest rates of any groups in 1927.

X-RAY FILMS

METHODS OF FILING TO PREVENT POSSIBILITY OF FIRE *

There are three problems in connection with the use of x-ray films in hospitals — the main file, the new films and the current file. As a general rule the current file is kept in an office, the new films in either the dark room or the x-ray room, and the main file in a separate room. Each of these three situations presents a different hazard.

Unexposed films should be stored in metal boxes or cans (constructed of lead or lead-lined) on shelves two feet above the floor, or in approved double wall cabinets, vented to the outside air. The amount of unexposed films in standard containers kept outside of standard vaults should not exceed fifty pounds.

In some of our larger cities it has been found that the current or running file consists of from 500 to 3,500 films. In some instances the films are filed in ordinary filing cases in the main office, while in other instances they are kept in a fireproof vault with the main storage. When the current file is kept outside a fireproof vault the number of films should be kept to a minimum and transferred to the main storage vault as rapidly as conditions will permit.

There is another and easier way to control this situation, although an inspection of hospitals indicates that it has not met with popular favor. There is a so-called noninflammable film, made by treating cotton with acetic anhydride and acetic acid, and producing the same result physically but with the danger removed. The coating is similar to the other and it is used in the same way. The price of acetic anhydride makes the film a little more expensive. The noninflammable film is not unburnable as the name implies, but it is as safe as paper and rags, if not more so, for although its point of ignition may be a little lower than the others, its rate of burning is less and therefore the spread of the flame is slower without the production of dangerous gases. It is unnecessary to require any storage conditions for celluloid acetate films; therefore this offers an easy solution to the entire problem when a hospital uses only one style of film.

The chief objection to the use of the slow burning film is that it has a tendency to roll and is not so easily filed. Thus property and lives may be endangered to facilitate handling and filing.

In the following rules and standards, reference will be made to films in pounds, and the accompanying table may be used as a guide in computing the weight of films.

Approximate Weight of Films

No. of Negatives	Size	Approximate Weight
1,000	14 x 17 inches	118 pounds
1,000	12 x 14 inches	100 pounds
1,000	10 x 12 inches	60 pounds
1,000	8 x 10 inches	40 pounds

When more than 250 pounds of films are stored, they should be kept in a standard fireproof film vault constructed as follows:

1. A film vault shall not exceed 750 cubic feet in actual storage capacity, including aisles. The floor and walls of every such vault shall be of brick at least 8 inches thick or of reinforced concrete at least 6 inches thick. The roof shall be of reinforced concrete at least 6 inches thick. Walls, ceilings and floors of existing buildings that conform to these requirements may serve as wall, roof or floor of such a vault, provided the other protective barrier or barriers composing the vault are rigidly tied into them and the interior vault space is limited in each case to 750 cubic feet.

2. A fire door shall be provided on each face of the wall to door openings leading into such vaults. Such doors shall be of an approved type, that is, bearing the label of the Underwriters' Laboratories. The interior door shall be made to close automatically. The outer door shall be of the swinging type and shall be made to close into a jamb so as to prevent the passage of flame around the edges. It shall be self-closing and so arranged as to close automatically in cases of fire originating inside or outside the vault at such times as it may be temporarily fastened open.

3. No skylights shall be permitted.

4. Slatted shelves shall be divided vertically at intervals not exceeding 10 feet. Backs and divisions shall be preferably of incombustible material, or of 7/8-inch tongued and grooved boards, or their equivalent in resistance to heat and gases. Slats shall be not over 4 inches wide and spaced at least 1 inch apart. Aisle space shall be at least 3 feet wide. Height of racks shall be 2 feet below sprinkler deflectors.

5. Each storage room shall be equipped with automatic sprinklers, arranged according to the sprinkler regulations so far as applicable. A sprinkler head shall be installed in the center of the aisle opposite each section. The area to be covered by each sprinker head shall not exceed 64 square feet of floor area.

A room so located on the roof as not to endanger other parts of the building requires automatic sprinklers only when salvage of the contents is desired or when there is probability of panic from the fumes.

6. An adequate vent to the outer air shall be provided. The area of the vent shall be equal to a clear opening of at least one-half square inch per cubic foot of room. Such vent may be provided by installing approved heat-releasing devices on the windows, preferably on the upper sash, arranged to open windows automatically in case of fire.

7. Heating should preferably be by hot water. When steam heating is used, only low pressure steam shall be permitted. Radiators or coils shall be on the ceiling or shall be adequately screened, and pipe lines shall be protected and screened.

GENERAL RULES AND CAUTIONS

1. A metal can having a self-closing spring hinged cover and approved by the Underwriters' Laboratories should be provided for all waste negatives and film scrap, and at no time should these be permitted to accumulate and lie around on tables, benches or floor.

2. Stocks of unexposed films should be kept at a minimum. Only a limited supply should be kept on hand at any one time.

3. In rooms where films are filed or handled there should be no flames or any other than standard electrical fixtures. The use of portable lights on extension cords should be prohibited. All open lamp bulbs should be protected from breakage by suitable guards. An approved hand fire extinguisher should be in each room where films are handled. Doors of dark rooms and of other rooms should be arranged so as to make egress easy.

4. Film negatives should be filed as soon as possible in heavy manila envelops, either singly or by case. These should be conveniently arranged so that from time to time useless negatives may be weeded out.

5. Film illuminators shall be so designed that the diffusing glass is not hot to the touch and there shall be no unnecessary display of film negatives in lighted illuminators. Negatives set up for viewing shall be confined to those actually being inspected.

6. Smoking shall be probihited in rooms where films are stored, in developing rooms and in similar workrooms. "No Smoking" signs shall be posted in prominent places.

7. No films shall be stored within 2 feet of steam pipes, radiators, chimneys or other sources of heat.

* Extract from article by Hobbs, R. D.: Minimizing the Fire Hazards of X-Ray Films, Modern Hospital **31**: 79 (Nov.) 1928.

Autopsy and Diagnosis.—I believe that in strict honesty we must admit that, as far as academic accuracy goes, a considerable percentage of diagnoses are either not made or are wrong; also that a large proportion of these are not due to any fault on the part of the physician but are due partly to the inadequate development of medicine and partly to the tricks of nature. There is, it may be remarked, just one physician whose diagnoses are always correct. That is the one who never has any autopsies performed.—Weingart, Julius: A Study of the Principles of Medical Diagnosis, *Nebraska M. J.*, April, 1929.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, MAY 25, 1929

THE HAZARD OF TOXIC GASES FROM COMBUSTION OF ROENTGEN-RAY FILMS

When the first newspaper reports of the Cleveland catastrophe were issued, the toxic effects were attributed to what were described as heavy brown fumes of bromine gas and to various other toxic gases. To chemists familiar with the decomposition of nitrocellulose, it seemed certain that the brown fumes were those of nitrogen tetroxide. The inflammable type of film is prepared from nitrocellulose, or nitrated cellulose, as it is frequently called; the substance is one quite familiar to those who have studied explosives and the effects of their gaseous by-products. When the product is subjected to combustion—or "explosion"—there are produced among other substances carbon monoxide and nitric oxide (NO). Nitric oxide, even in air, quickly takes on oxygen, forming nitrogen dioxide (NO_2) or its polymer nitrogen tetroxide (N_2O_4)—the form in which it exists depending on the temperature. All students in first year chemistry recall the preparation of this dark brown substance, dense, but not nearly so heavy as bromine gas. The nitrogen tetroxide, as well as any unoxidized nitric oxide,[1] readily reacts on the lungs and with the hemoglobin of the blood. Deaths from inhalation of so-called nitrous fumes have been reported many times. In one case, a carboy of nitric acid to which contaminants had been added accidentally exploded, yielding brown fumes of oxides of nitrogen. Firemen and policemen rushed in only to succumb, some almost immediately, others hours later, to the effects of the toxic nitrogen tetroxide. Of a similar nature were the experiences during the World War of some of the observers of the effects after explosions of nitrocellulose.

Films do contain salts of silver, particularly silver bromide, but the amount of bromide present, particularly in developed films, is relatively small; even so, it seems unlikely that the conditions would be such that the stable silver bromide could be broken up sufficiently to yield bromine gas in anywhere near the toxic quantities reported. Films are also produced by various combinations of organic substances; synthetic camphor is used in making some types. It will be recalled that the reports of the Cleveland disaster emphasized the odor of camphor. To sum up, it is apparent that of the complexity of fumes which may be given off during ignition of a large collection of both old and new films there is possibility of the presence particularly of the toxic carbon monoxide and nitrogen tetroxide as well as of other toxic or irritating substances. It appears unlikely that bromine could develop in amounts sufficient to be of importance.

There are two general classifications of films—inflammable and noninflammable. The noninflammable—a "safety" film—does not contain the nitrated group; hence it is slow burning and the hazard of combustion is minimized. The chief disadvantages of the noninflammable over the inflammable film are stated to be the increased cost of the former and the tendency to roll and curl. The fire hazard of storing roentgen-ray films, particularly the inflammable type, has been recognized for some time. In fact, all hospitals provide special rooms and special apparatus for storing, varying, however, from hazardous to safe conditions. There is need for constant vigilance. The number of records stored in one room, if of the inflammable type, should be limited. Steel cases are helpful. Prints might be used instead of films wherever feasible. In the November, 1928, issue of *Modern Hospital,* R. D. Hobbs, Western Actuarial Bureau, Chicago, reported a fire in the Memorial Hospital, Albany, N. Y., the description of which was in some respects quite similar to that of the Cleveland Clinic, except that no lives were lost. Particularly interesting are the following paragraphs:

> On Saturday, March 17, 1928, at about 4:30 p. m., a fire was discovered in the Memorial Hospital, Albany, N. Y. It occurred in a small room on the first floor used for the storage of films and x-ray equipment. In this room, on wooden shelves around both sides and above the entrance, were stored exposed films packed in ordinary cardboard boxes.
>
> The cause of the fire is undetermined, although a thorough investigation has been made by several authorities. No one, according to the best information available, had visited the room within half an hour of the time of the discovery of the fire, and the last employee to visit the room declares emphatically that he was not smoking and that everything appeared to be in order when he left.
>
> Efforts were made by the employees to fight the fire but they were unsuccessful, and fumes from the burning films forced their retreat. In leaving the fire, the employees in their haste and excitement failed to close the doors between the corridor leading from the film room and the main hallways, in which are the open stairs leading directly to the upper floors. This allowed the smoke and fumes to permeate the building.

It is evident that the time interval in the Albany fire was greater than that in the Cleveland disaster, which permitted the removal of patients in time. Because of the current interest of the subject to THE JOURNAL readers, the rules and precautions suggested by Hobbs are reprinted in this issue.[2]

1. The oxides of nitrogen discussed here do not include nitrous oxide (N_2O), which is well known to the medical profession as an anesthetic gas.

2. See page 1763.

VITAMIN E

The frequent occurrence of sterility in the human species and the difficulties that its problems usually present to the physician who is expected to deal with them have contributed considerable interest to the more recent study of the subject in relation to diet. It has been only a few years since the announcement was made of the discovery of so-called vitamin E, which is believed to bear some relation to fertility in at least one animal species. It was found that, on certain diets, rats could grow to full maturity and appear normal but they were not able to reproduce. This type of sterility was soon identified as a dietary deficiency defect, as it can be prevented by a change in the food regimen. Specifically, this involved the addition of certain natural foods rich in the food factor designated as vitamin E, the antisterility vitamin. Concentrates of this potent principle have been prepared. The defect referred to affects males and females differently. In the male it leads to destruction of the germ cells and eventually of the entire seminiferous epithelium. This is not the case with the female, in which the ovary and ovulation are unimpaired throughout the sexual life. A highly characteristic disturbance occurs in gestation—death and resorption of the developing young.

Thus far the lipoid extracts of cereal grains as well as various kinds of leafy vegetables, such as lettuce, have been found to furnish vitamin E most abundantly. However, the list of alleged independent dietary essentials included in the category of vitamins has grown so rapidly that students of nutrition are becoming increasingly more critical regarding the specificity of each proposed addition to the list. It seems imperative to marshal the claims for A, B, C, D, E, F, G and H in order to determine whether they really do not involve duplication of the same essentials through the chance differences in their distribution. Such confusion could be averted if the vitamins were actually isolated as chemical individuals so that their structural make-up could be identified. This goal is as yet by no means reached.

In the case of vitamin E it was suggested not long ago that this food component may have some relation to the assimilation of iron and the functions of hematopoiesis in the body. This view, however, has since been found to be untenable, most recently by Mason,[1] who made comparisons between the total erythrocyte count and total hemoglobin content of the blood in male rats fed diets deficient, and diets abundant, in vitamin E. Although repeated estimations were made on the same animals at various intervals, the erythrocyte and the hemoglobin content were normal in all cases studied. It might reasonably be expected that a substance sufficiently potent to "determine" the fertility of an individual would have pronounced effects on other than gonadal tissues, so that "sterility disease" would involve the nutritive or functional welfare of various parts of the organism. In Mason's investigations, however, necropsies made on hundreds of sterile animals, representing a large variety of dietary regimens, have revealed nothing of significance outside the reproductive tract. Microscopic studies on the suprarenals, thyroid, pancreas, liver, spleen and lymph glands of these rats were negative. The epididymis, however, and in some cases the prostate and seminal vesicle, have shown interesting changes which appear to be a natural consequent of the degeneration of the testis, and not a primary resultant of lack of vitamin E. Such observations, though negative in character and therefore less convincing, serve to stress anew the apparently highly specific character of the dietary involvements that may lead to sterility. Obviously the observations on animals restricted to highly specialized diets should not be translated without reserve or extensive parallel investigations to the human species. Nevertheless the established facts about vitamin E serve to confirm a widespread conviction that diet and fertility may be interrelated; and they should not be overlooked in relation to human welfare.

1. Mason, K. E.: The Effect of Purified Diets, and Their Modifications, on Growth and Testicular Degeneration in Male Rats, J. Nutrition 1: 311 (March) 1929.

PLASMA CHOLESTEROL AND DIABETES

The history of the changes that have been instituted in the management of diabetes during the last quarter century is illustrative of what real progress in medicine may involve. At the beginning of the century examination of the urine furnished the foremost guide, and restriction of carbohydrate intake the chief therapeutic aid, in relation to the individual patient. Presently the introduction of suitable comparatively easy methods of blood analysis made it easier to discover incipient or latent possibilities of disorder in carbohydrate metabolism. Considerations of hyperglycemia supplanted those of glycosuria. The interrelations of ketosis with diabetes presently became better understood, so that the disease began to be considered with reference to abnormalities in the catabolism of fat as well as of sugar. The "starvation" treatment of Allen maintained considerable vogue until the advent of insulin and all that it has contributed to the welfare and longevity of the patient with diabetes.

In the course of these rapidly developing innovations in both the knowledge and the treatment of diabetes there has been a growing appreciation of the need of careful laboratory checks on the actual conditions of the patients. The control estimations of blood sugar as well as of ketone substances in the urine have become routine. Of late the fats and related lipoids in the blood have been measured as indexes of possible perversions in fat metabolism which have been recog-

nized ever since phlebotomy disclosed a milkiness of the blood of diabetic persons. Indeed, Joslin [1] has remarked that with an excess of fat diabetes begins and from an excess of fat patients with diabetes die—formerly of acidosis, now of arteriosclerosis. Little more than a decade has elapsed since, through the application of Bloor's technic for the study of fat in the blood, it could be shown that "all types of diabetes are distinguished by a marked increase in the lipoids of the blood, and the general statement can be made that the increase is progressive with the seriousness of the disease." Indeed, it has been alleged that the amount of blood sugar present is not nearly as accurate a test of the severity of the disease as is the amount of blood lipoids.

Cholesterol is a constant accompaniment of the other fatlike constituents of blood, though it has a striking chemical individuality. This is represented in its composition as an unsaturated higher monatomic alcohol. Unfortunately, the physiologic functions and even the genesis of this substance present in all the tissues and cells of the organism remain obscure. When cholesterol or its esters become overabundant they may obtrude themselves on the attention. Fortunately, the estimation of cholesterol has become developed so that the analytic procedures lend themselves readily to clinical application. Cholesterol has consequently become distinctly related to the prognosis of diabetes; and recently Rabinowitch [2] of Montreal has made a further plea for the use of estimations of plasma cholesterol as an index of lipoid metabolism in cases of diabetes mellitus. He points out that plasma cholesterol values tend to run approximately parallel to those of the total fatty acids. Therefore, any change of the latter is reflected in the former. In fact, on the basis of two thousand observations on nearly four hundred patients, Rabinowitch has concluded that the cholesterol content of the blood is a better index of the course of diabetes than the blood sugar. Patients may, on discharge from the hospital, have a normal amount of blood sugar and the urine may be free from sugar. In many of these cases, the cholesterol content of the blood is increased. By observing these patients as they return to the outdoor clinic, differences in progress are noted. The course of the patient who has a normal amount of blood sugar but a high cholesterol content does not, on the average, appear to run as uneventful for the same length of time as that of the patient who has not only a normal amount of blood sugar but also a normal amount of cholesterol. When there is a large amount of cholesterol, the slightest dietary indiscretions result in more marked and more persistent hyperglycemia than when the cholesterol content is normal. Hyperglycemia resulting from slight illnesses appears to Rabinowitch to be more frequent with a large than with a normal amount of cholesterol; and when the cholesterol is increased, the incidence of neuritis and of vascular changes is greater. Of course, as with all laboratory tests, in the interpretation of results obtained consideration should be given to other conditions which might lead to high values. These include jaundice, cholecystitis, pregnancy and nephrosis.

1. Joslin, E. P.: The Treatment of Diabetes Mellitus, Philadelphia, Lea and Febiger, 1928.
2. Rabinowitch, I. M.: The Cholesterol Content of Blood Plasma in Diabetes Mellitus, Arch. Int. Med. **43**: 363 (March) 1929.

HEREDITARY ECTODERMAL DYSPLASIA

Growth has aptly been described as a physiologic process dependent on some deep, inherent characteristic of living protoplasm at present unknown. A suitable environment, including an appropriate food supply, provides the essentials for growth.[1] The medical profession is frequently confronted with perverted growths which are derived from various tissues and organs and which are entirely outside the range of orderly physiologic variation of organ form or bodily development. Thus there are pathologic tumors, either benign or malignant in character, which produce extreme distortions. These furnish special occasions for study and treatment. Growth may be aberrant in quite different ways, leading to distortions or bodily peculiarities that may be described as abnormal rather than pathologic. In this category the anomalies of form and structure belong. Such extremes as gigantism or dwarfism and oddities like polydactylism are familiar.

There are less spectacular manifestations that present equally baffling problems to the student of development. Among them are congenital anomalies of groups of tissues that arise from the same layer of the primitive embryo. The embryonic epiblast, for example, gives rise to the epidermal structures, the nails, hair, teeth, the glands of the skin, the external organs of sense, as the ear and eye, and the nervous system and the mucous membranes of the mouth, nose and anus. Congenital absence or congenital defects of some of these tissues are exceedingly common. Thus, the dental literature abounds with reports of congenitally missing teeth, double rows of teeth and misshapen teeth. The dermatologic literature reveals many cases of congenitally deformed nails and congenital alopecia.

Weech [2] has recently added instances from the Johns Hopkins Hospital to the records of unusual types of multiple congenital anomalies, the tissues affected in both cases having developed principally from embryonic ectoderm. They have the added peculiarity of presenting factors of inheritance. The science of genetics is thus brought into consideration. Both of Weech's patients showed defective development of the hair and teeth, unusual conformation of the skull, and thick, prominent lips. In both cases, histories were obtained indicating that heredity was a factor in the production of the anomalies. In addition, the first patient pre-

1. The subject has been discussed in "Growth," by various authors, New Haven, Yale University Press, 1928.
2. Weech, A. A.: Hereditary Ectodermal Dysplasia (Congenital Ectodermal Defect), Am. J. Dis. Child. **37**: 766 (April) 1929.

sented a smooth, dry, glossy skin with total absence of sweat and sebaceous glands, papular lesions on the face, malformations of the nose, an atrophic rhinopharyngolaryngitis, and heat intolerance. These observations were absent in the second patient, who showed, in addition, defectively formed nails, poor demarcation of the vermilion border of the lips, and an elevated basal metabolic rate.

One reverts inevitably to consideration of the origin of such developmental anomalies. Infection is excluded in the instances cited. The possibility that an endocrine disturbance may be an important etiologic factor is thought improbable. To those who find satisfaction in the imaginative hypotheses of geneticists it may be comforting to learn one proposed explanation. It is suggested by Weech, that the various ectodermal anomalies may arise as the result of a genetic mutation that occurs, not by accident, but as the occasional expression of a usually suppressed tendency to change inherent in the make-up of the genes themselves. For those who still prefer to avoid the confusions and complexities of the genes that dominate present-day theories of heredity, a suitable diagnostic term for the various congenital anomalies of ectodermal origin has been devised. The term suggested is "hereditary ectodermal dysplasia."

Current Comment

THE CLEVELAND DISASTER

By the time this issue of THE JOURNAL appears, the details of the Cleveland Clinic disaster will be familiar to all our readers. The first reports stimulated the usual flood of theories and nonsense. As investigations continue it appears that, by some unknown cause related perhaps to certain plumbing repairs, films stored in a room in the basement caught fire, exploded, sent forth clouds of nitrogen tetroxide gas mingled with varying quantities of other gases, killed one hundred and twenty-five persons and sent from eighty to a hundred others into hospitals for treatment. The list of death notices of physicians published in this issue is impressive by the number of physicians who met death while at their work of diagnosis and treatment of the sick. To the relatives and friends of these men, to all who have suffered loss in this disaster, the medical profession tenders sympathy. In the face of such a catastrophe there can be no consolation. Life goes on; steps are taken to control so far as possible such accidents in the future. Probably an exactly similar accident will not occur soon again. As long, however, as modern industry and modern science continue to deal with highly inflammable, explosive or poisonous materials, and as long as human beings continue to be the variable beings they are, conditions and circumstances will meet occasionally to produce such a result as is represented by the Cleveland disaster.

THE MEANING OF BIER'S SPOTS

An interesting illustration of the unique purposeful readjustments that occur in the body when some menacing condition has developed has recently been brought to light by the studies of Rous and Gilding[1] at the Rockefeller Institute for Medical Research. They deal with the occasional peculiar localized development of anemia when the total blood supply of the organism has been reduced. Their work did not concern vasomotor constriction, like that of Raynaud's disease, which alters the blood flow to a part, or the obvious implications of obliterating endarteritis or the more recently differentiated thrombo-angiitis obliterans. These conditions may include manifestations of rubor and ischemia but have little to do with the condition of the general circulation in parts other than those specifically involved. Rous and Gilding have demonstrated, however, that sudden reductions of the blood volume may lead to readjustments whereby the organs essential to the maintenance of life and to recovery continue to be well served by the circulation but at the expense of unessential ones, both visceral and peripheral. Thus, in their experiments on animals, the heart and lungs, the alimentary tract throughout its length (inclusive of the tongue and the gallbladder), the liver, pancreas, red bone marrow and respiratory muscles suffered almost no deprivation, even when the depletion was pushed so far as to endanger life; whereas the skin and the voluntary muscles in general, the omentum, fat depots and the urinary bladder were greatly neglected. Other neglected organs developed ischemic patchings. The combination of nearly empty vessels and a slight, inadequate blood flow seems to favor the genesis of the peculiar ischemic manifestations—pallid patches on a somewhat congested skin deprived of its normal circulation. The New York pathologists have pointed out the striking similarity between the experimental manifestations and the so-called Bier's spots in man. The latter, as they note, represent blanchings in an engorged human skin. They appear gradually and enlarge by peripheral extension and coalescence. The ischemic patching of animals also develops gradually in skin from which the blood supply has been not quite all cut off; and the patches appear and spread as do Bier's spots. Rous and Gilding remark that the cells involved in Bier's spots are abnormally irritable. Tapping the congested skin, or a light stroking which would elicit no response normally, causes a pronounced local reaction of dilatation or contraction when the cutaneous circulation has been cut off for some minutes. Usually the response is contractile, white patches appearing. Often they are situated at a distance from the point stimulated. In any event there is a close analogy between the experimentally produced ischemia and Bier's spots. As Rous and Gilding conclude, the slowly developing vascular contraction which is responsible for Bier's spots and for the ischemic patching of animals acts to narrow the circulatory bed when the blood volume has been reduced and thus tends to conserve the flow to vital organs.

1. Rouse, Peyton; and Gilding, H. P.: The Meaning of Bier's Spots, Proc. Soc. Exper. Biol. & Med. 26: 497 (March) 1929.

Association News

MEDICAL BROADCAST FOR THE WEEK

The American Medical Association Morning Health Talks and Evening Health Hints from Hygeia

The American Medical Association broadcasts daily at 10:45 o'clock in the morning, central daylight saving time, over Station WBBM (770 kilocycles, or 389.4 meters).

The program for the week of May 27 to June 1 will be as follows:

May 27. "Trachoma Prevention," by Dr. R. G. Leland.
May 28. "I'm Almost as Deaf as a Post and I Like It," by Dr. R. G. Leland.
May 29. "The Benefits of a Yearly Physical Examination," by Dr. James O. Nall.
May 30. Holiday. No talk.
May 31. "Guarding the Campers' Health," by Dr. R. G. Leland.
June 1. "Summer Occupations for the Children," by Miss Mildred Whitcomb.

Evening Health Hints from Hygeia at 8 o'Clock, Central Daylight Saving Time

May 27. "Little Danger From Ice in Water."
May 28. "Perverted Appetite."
May 29. "Soda Taken by Mouth."
May 30. "How a Mother Views Vivisection."
May 31. "Control Your Emotions."
June 1. "Filling Teeth with Brunswick Stew."

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ARIZONA

Personal.—Dr. Harry T. Southworth, Prescott, was elected president of the Arizona Public Health Association at the annual meeting, April 17.——Dr. Robert Ferguson, Bisbee, has been made chief surgeon at the Copper Queen Hospital, succeeding Dr. George A. Bridge.

Unique Plan for Graduate Study.—The Yavapai County Medical Society and the medical officers at Fort Whipple held their annual banquet, March 26, to celebrate the close of their graduate study course (THE JOURNAL, June 9, 1928, p. 1876). The winning group comprised Drs. Southworth, John W. and Robert S. Flinn, Devine, Sullivan, Thomas, McWhirt, Bassett, Hazel, Matschke and Linn. The average attendance for all groups taking part in the graduate study for the year was 97.8 per cent.

CALIFORNIA

Personal.—The board of supervisors of Yolo County paid a tribute to Dr. Hiram D. Lawhead, Woodland, as county physician, from which work he has resigned after many years of faithful service.——Dr. Alvin E. Cerf has been appointed chief of staff of French Hospital at San Francisco, succeeding Dr. Lloyd B. Crow.——Dr. Richard Dewey, La Canada, was guest of honor at a dinner given by the Los Angeles Society for Neurology and Psychiatry at the University Club, May 15. Dr. Dewey, now 83 years of age, recently passed successfully through a gastro-enterostomy following a pyloric perforation.

Bills Passed.—The following bills have been passed by the house and the senate: Senate bill 207, providing that when a defendant pleads not guilty by reason of insanity, the court must select two, and may select three, alienists from the medical staff of the state hospitals to pass on the defendant's mental condition; bill 214, amending the medical practice act by providing that an applicant for a physician's and surgeon's certificate must hereafter, in addition to the present requirements, show that he has completed not less than one year's training in a hospital approved by the board or has had equivalent experience; senate bill 487, authorizing cities and counties to establish tuberculosis preventoriums; house bill 346, requiring applicants for marriage licenses to present certificates from a physician, certifying the absence of venereal disease; house bill 523, providing for the establishment of a state hospital for the insane in southern California; house bill 588, amending the medical practice act by providing that the board of medical examiners may accept in lieu of the required examination for a license a certificate of examination issued by the National Board of Medical Examiners; and house bill 809, amending the medical practice act by requiring that licenses be "registered" in every county in which the holder practices.

CONNECTICUT

Bill Introduced.—Senate bill 528 proposes to amend the law requiring all practitioners of the healing art and nurses to register annually, by providing that any person who shall have retired from active practice or who shall live outside the state shall not be required to pay the annual registration fee. It provides further that the law requiring annual registration shall not apply to any person practicing nursing without compensation.

GEORGIA

State Medical Election.—At the eightieth annual meeting of the Medical Association of Georgia, Macon, May 10, Drs. William R. Dancy, Savannah, was made president; George Y. Moore, Cuthbert, president-elect; Charles H. Richardson, Jr., Macon, Grady N. Coker, Canton, vice presidents, and Drs. Allen H. Bunce, Atlanta, and Olin H. Weaver, Macon, delegate and alternate, respectively, to the American Medical Association. The attendance at this meeting was said to be the largest in the history of the association. The next annual meeting will be at Augusta, May 14-16, 1930.

Society News.—The Fulton County Medical Society, Atlanta, was addressed, April 18, by Dr. Frank Lee Bivings on "Coryza, Croup and Bronchitis as Allergic Reaction."——Dr. Samuel H. Haddock, Macon, has been elected health officer of Jenkins County.——The Fulton County Medical Society, Atlanta, was addressed, May 2, by Dr. Garnett W. Quillian on "Significance of the Pathologic Cervix: Its Diagnosis and Treatment."——The Fulton County Medical Society was addressed, May 16, by Dr. William C. White, Washington, D. C., on mental defectives, and Dr. George Kirby Collier, Rochester, N. Y., on epilepsy.

ILLINOIS

County Tuberculosis Sanatoriums.—The state health officer, Dr. Andy Hall, says that the fifteen county tuberculosis sanatoriums in Illinois care for about 1,200 patients a year. They have a total bed capacity of 815, and they operate at an aggregate expense of $620,000 a year. Of the patients admitted only 15 per cent have incipient tuberculosis; fully one half have advanced tuberculosis. The tuberculosis death rate last year in Illinois was 73.5 per hundred thousand of population, the lowest rate on record for the state. There were 5,441 deaths due to tuberculosis.

Society News.—The St. Clair County Medical Society, East St. Louis, was addressed, May 2, by Dr. E. R. Kellersberger of the Belgian Congo, Africa, on "Medicine in Central Africa"; Dr. Kellersberger has spent fourteen years practicing in Africa.——Dr. Charles B. Voigt, Mattoon, was elected president of the District Medical Society of Central Illinois at its fifty-third annual meeting in Pana, April 30.——The Vermilion County Medical Society was addressed, May 7, by Dr. Loyal E. Davis, associate professor of surgery at Northwestern University Medical School, Chicago, on "Trigeminal Neuralgia."——Dr. Chester M. Van Allen, Chicago, addressed the Vermilion County Tuberculosis Association at Danville, April 3, on "Massive Collapse of the Lungs in Pulmonary Tuberculosis," and Dr. Wilson R. Abbott, Chicago, on "Errors in Early Diagnosis of Pulmonary Tuberculosis."

Chicago

New Hospital for Northwestern.—The new Passavant Hospital on the campus of Northwestern University Medical School, East Chicago Avenue near the lake, was opened to the public, May 21. Patients will be received, June 3. Dr. Irving S. Cutter, dean of the medical school, will be superintendent, and the staff will be members of the faculty of the school. The $2,000,000 institution will open with 200 beds, the east wing being used to house 100 nurses until a nurses' home is built. Dr. A. W. Passavant founded the Passavant Hospital in 1865. It was destroyed by fire in 1871, rebuilt in 1885, and four years ago was closed because the building was inadequate.

Wedeles Fund for Study of Heart Disease.—Michael Reese Hospital announces the establishment of the Emil and Fannie Wedeles Fund for the Study of the Heart and Circulation, by Mrs. Fannie Wedeles of Chicago in memory of her

husband, who died of heart disease. The studies will be clinical, laboratory and social in the hospital wards and in the outpatient cardiac clinics of the Mandel Clinic. Emphasis will be placed on the social aspects of heart disease. The work will start with an investigation of "angina"; rheumatic heart disease in children, the goiter heart and other forms will be taken up as opportunities arise. Members of the cardiovascular group of the staff of Michael Reese Hospital will direct the work. Mrs. Wedeles and her nephew, Dr. Samuel Goodman of Tulsa, Okla., will be ex officio members. The income from the fund will vary, but for the next five years it will be $7,000 a year.

Benefit by Belgian Band. — The symphonic band of the Royal Belgian Guards, under the patronage of King Albert and the Belgian ambassador to the United States, gave two benefit performances for the building fund of the Henrotin Hospital at the Auditorium Theater, May 19. Leading citizens and the staff of physicians and nurses of the hospital attended the performances. The city of Chicago, in widening La Salle Street, will raze the present hospital, but a new Henrotin Policlinic Hospital is to be erected before the old one is demolished. The Henrotin Hospital was founded forty-three years ago by Dr. Fernand Henrotin, who was born in Belgium. He graduated at Rush Medical College in 1869. He was for eight years on the staff of the Cook County Hospital, was for years surgeon to the police and fire departments, was surgeon to a brigade of the Illinois National Guard, and was president of the Chicago Gynecological Society. The new building will be nine stories, of red brick trimmed in stone, with the main entrance on Oak Street. There will be private and semiprivate rooms but no wards. The Henrotin Hospital in appealing to the citizens of Chicago for financial assistance estimates that the staff has rendered to the community gratuitous service in the care of the needy sick to the extent of more than $5,000,000. During the last twelve months 64 per cent of the patients cared for paid either nothing or less than the actual cost. The Royal Belgian Guards Band was organized soon after Belgium achieved her liberty in 1830. It has more than eighty musicians.

INDIANA

Personal.—Dr. Helen P. Langner, Richmond, Va., has been appointed director of the child guidance clinic of Indiana University, Indianapolis, which will be maintained by the Indianapolis Foundation under a bequest by Delavan Smith for two years. Dr. Langner, a graduate of Yale in 1922, was for five years with the Manhattan State Hospital, then was with the National Committee for Mental Hygiene, and director of the mental hygiene clinic of the state department of public welfare at Richmond.——Dr. Paul D. Crimm, Hartford, Conn., has been elected superintendent of the Boehne Tuberculosis Hospital, Evansville, to succeed Dr. George E. Mills, resigned.——Dr. Amos J. Hostetler, Lagrange, has been reappointed a member of the state board of health for a term of four years.——Dr. William R. Davidson, Evansville, has been reappointed a member of the state board of registration and examination for four years.

Society News.—The one hundred and twenty-third semiannual meeting of the Union District Medical Association was addressed, April 25, at Rushville, by Dr. Charles S. Houghland, Milroy, on "The Heart, the Doctor and the Patient"; the other speakers were Drs. Eslie Asbury, Cincinnati, and Walter E. Sistrunk, Rochester, Minn. —— The last regular meeting of the season of the Indianapolis Medical Society, May 28, will be addressed by Drs. Harold M. Trusler on intestinal obstruction; Olin B. Norman and Horace M. Banks, on "Cancer of the Heart and Pericardium, Secondary to Adenocarcinoma of the Ovary," and Ross C. Ottinger, on "Malignancy of the Rectum." The society held a joint meeting, May 21, with the Indiana Academy of Ophthalmology and Oto-Laryngology at which the guest, Dr. Samuel J. Kopetzky, New York, spoke on "Present Status of the Problem of Progressive Deafness." —— The Howard County Medical Society was addressed, April 5, by Dr. John A. MacDonald, Indianapolis, on arteriosclerosis.

IOWA

Personal.—Dr. Henry Albert, Des Moines, has been reappointed state commissioner of health for four years.——Dr. Kenneth C. Peacock has been elected chairman of the professional men's bureau of the chamber of commerce of Sioux City.

New Members of Board of Health.—Governor Hammill has appointed the following members of the state board of health: Drs. Herbert R. Sugg, Clinton, reappointed; Cassius T. Lesan, Mount Ayr; Herbert W. Plummer, Lime Springs; William A. Seidler, Jamaica, and James D. Lowry, Fort Dodge. The last four mentioned succeed Dr. Harley L. Sayler, Des Moines; Dr. Daniel C. Steelsmith, Dubuque; Mr. W. D. Hayes, Sioux City, and Dr. Andrew A. Robertson, Council Bluffs.

Society News.—The Twin Lakes District Medical Society will hold its seventh annual diagnostic clinic at Twin Lakes (Rockwell City), June 20. —— The Tama County Medical Society, Garwin, was addressed, April 25, by Dr. Manning L. Allen of Tama on rabies.——Dr. Merrill M. Myers, Des Moines, was elected president of the Iowa Heart Association at the annual meeting, May 10, and Dr. Fred M. Smith, Iowa City, vice president. Dr. Hugh McCulloch, assistant professor of clinical pediatrics, Washington University School of Medicine, St. Louis, among others, gave an address on "Rheumatic Fever as an Allergic Disease"; sixty-seven persons attended the luncheon.

Second Annual Course at Iowa City for Practitioners.—The extension division of the University of Iowa College of Medicine, Iowa City, will conduct its second annual course for practitioners, June 4-7. Among the instructors will be specialists in tuberculosis and heart disease. The mornings will be given over to ward walks by small groups and to clinics, and the afternoons in part to chest studies at the Oakdale Sanatorium. The surgical section will conduct bedside study, conferences and clinics. The visiting instructors will be Drs. Hugh McCulloch, Washington University Medical School, St. Louis; Jay A. Myers, University of Minnesota School of Medicine; George E. Brown of the Mayo Foundation, Rochester, Minn., and Cyrus C. Sturgis, University of Michigan Medical School, Ann Arbor. The speakers will include Drs. Royal W. Dunham, Ottawa, Ill.; Carl A. Hedblom, University of Illinois College of Medicine, Chicago; Walter H. Watterson, U. S. Veterans' Bureau Hospital, Maywood, Ill.; Clinton E. Harris, Woodmen, Colo., and Joseph L. Miller, Rush Medical College, Chicago. Those attending the graduate course will be invited to a meeting of the Johnson County Medical Society, June 6, which will be addressed by Dr. Morris Fishbein, Chicago, editor of THE JOURNAL.

LOUISIANA

Conditions of Award of Medal.—The award of the Geiger Medal will be restricted to senior and graduate students in the University of Tulane, New Orleans. The term senior includes students in any college of the university who expect to receive a baccalaureate degree. The thesis shall deal with some phase of public health. The committee of award shall comprise the head of the department of English, Professors Musser and Faust of the medical school, and Professor Hathaway of the College of Arts and Sciences (THE JOURNAL, Jan. 26, 1929, p. 320).

Dr. Granger Honored.—Dr. Amédée Granger, head of the department of radiology, Graduate School of Medicine of Tulane University of Louisiana, and director of the roentgen-ray department of Charity Hospital, New Orleans, has been awarded the gold Palmes Universitaires by the French government for outstanding work in radiology. The decoration was presented, April 25, by the French consul general in New Orleans, Maurice de Simonin. France awarded the silver Palmes Universitaires to Dr. Granger in 1921. He was awarded the gold medal of the Radiological Society of North America in 1926. Dr. Granger has been on the faculty at Tulane since 1908.

MARYLAND

Scarlet Fever Epidemic.—Seventy-three cases of scarlet fever were reported early in May in the Hampden-Woodberry mill district, Baltimore, and they were said to have been due to failure on the part of the residents to observe quarantine regulations. The control of the epidemic was in charge of Drs. John Fred Hempel, assistant commissioner of health, and Charles J. Wells, health officer of that district.

Dr. Clark Appointed Superintendent Emeritus. — Dr. Joseph C. Clark, for thirty years superintendent of the Springfield State Hospital at Sykesville, has been relieved of work because of illness; in appreciation of his long service he has been appointed superintendent emeritus, and arrangements have been made for him to continue living in his present home at the hospital. His successor as superintendent is Dr. Edwin P. Bledsoe, medical officer in charge of the U. S. Veterans' Bureau Hospital at North Chicago, Ill. Dr. Bledsoe was for nine years superintendent of the Arkansas State Hospital.

Dr. Krause Goes to Arizona.—Dr. Allen K. Krause, associate professor of medicine and director of the Kenneth Dows Tuberculosis Research Laboratories, Johns Hopkins University Medical School, Baltimore, has been appointed director of the Desert Sanatorium and Research Institute at Tucson. He will

reside in a house on the sanatorium grounds, leaving Baltimore about October 1. Dr. Krause has held his present position at Johns Hopkins for thirteen years. He has been editor of the *American Review of Tuberculosis* since it was founded in 1917, and he has contributed many scientific articles on tuberculosis.

MASSACHUSETTS

State Medical Meeting at Boston, June 10-12.—The one hundred and forty-eighth annual meeting of the Massachusetts Medical Society will be held at the Copley Plaza Hotel, Boston, June 10-12, under the presidency of Dr. John M. Birnie, Springfield. Drs. Henricus J. Stander, Baltimore, will speak on "Toxemias of Late Pregnancy"; Lewis Gregory Cole, New York, "Some Phases of the Ulcer Problem"; Martin E. Rehfuss, Philadelphia, "Newer Studies on Importance of the Pyloric Motor Mechanism and Its Effect on Gastric Disease"; William L. Clark, Philadelphia, "Electrosurgery"; Charles P. Hutchins, Syracuse, N. Y., "Industrial Physiotherapy" with moving pictures; Eugene H. Pool, New York, "Postoperative Complications and Their Treatment," and Merrill J. King, Mount McGregor, N. Y., "Bacillus Abortus Infection of Milk." Many Massachusetts physicians will take part in the program. The Canti Cancer Film, which has created much interest throughout the country, will be exhibited. Dr. William H. Robey of Harvard University Medical School will give the Shattuck lecture following the annual dinner, Tuesday evening, on "Public Instruction in Medicine," and the state health commissioner, Dr. George H. Bigelow, will speak on "General Practice and the Public Health." The annual discourse, Wednesday morning, will be delivered by Dr. George C. Shattuck of Harvard University Medical School on "Interdependence of Tropical Medicine and General Medicine." There will be other medical moving pictures and clinics at various Boston hospitals, Monday morning, where luncheon will be served to the attending fellows. Monday evening an informal supper will be served in the ballroom followed by a program not wholly serious which will not be inappropriate to the occasion.

NEW HAMPSHIRE

State Medical Meeting at Manchester, May 28-29.—The one hundred and thirty-eighth annual meeting of the New Hampshire Medical Society will be held at Manchester, May 28-29, under the presidency of Dr. Joseph J. Cobb, Berlin. The general meeting, Tuesday morning, will be addressed by Drs. Joseph P. Bowler, dean of Dartmouth Medical School, Hanover, on "The Future of Rural Medicine," and Clarence O. Coburn, Manchester, on epidemic encephalitis; the afternoon session will be addressed by Dr. Dean Lewis, professor of surgery, Johns Hopkins University School of Medicine, Baltimore, on "Differential Diagnosis of Bone Lesions," and H. Sheridan Baketel, professor of preventive medicine and hygiene, Long Island College Hospital, Brooklyn, on medical economics. Among others, Drs. Howard N. Kingsford, Hanover, will speak on "Review of One Year's Autopsy Service"; Henry O. Smith, Hudson, "The Smallpox Menace"; Henry Schmitz, Chicago, "Pelvic Infection and Sterility in Women"; Roger I. Lee, Boston, on "Causes and Treatment of Edema"; Lawrence R. Hazzard, Portsmouth, "Diaphragmatic Hernia"; Henry H. Amsden, Concord, "Responsibility of the Medical Profession to Citizens of the State," and Winfred Overholser, Boston, "Place of Psychiatry in Administration of Criminal Law." At the banquet, Tuesday evening, Dr. Homer H. Marks, Berlin, will be the anniversary chairman. The house of delegates meets early Monday morning. The Hillsborough County Auxiliary will entertain the visiting ladies and assist during the meeting of the auxiliary of the state society. All meetings will be held at the Hotel Carpenter, where the exhibits will be also.

NEW JERSEY

State Medical Meeting at Atlantic City, June 12-15.—The one hundred and sixty-third annual meeting of the Medical Society of New Jersey will be held at Haddon Hall, Atlantic City, June 12-15, under the presidency of Dr. Ephraim R. Mulford, Burlington. Clinics in various subjects will be held at the Atlantic City Hospital each morning during the session. The program includes symposiums and papers by New Jersey physicians and the following guests: Drs. Henry R. M. Landis, Philadelphia, on modern treatment of tuberculosis with especial reference to rest; Henry W. Lloyd, New York; Walter E. Dandy, Baltimore, on injuries to the head; Jay F. Schamberg, newer methods of treatment in the attack on syphilis; Leighton F. Appleman, Philadelphia, importance of cycloplegia in the fitting of glasses; Isaac Hartshorne, New York, phaco-eresis; John M. Mitchell, Bryn Mawr, Pa., production of sensitivity to horse serum by diphtheria toxin-antitoxin; Roger H. Dennett, New York, routine use of vitamin B, a factor in infant feeding. Entertainment has been arranged in conjunction with the annual meeting of the women's auxiliary, comprising bridge, a volunteer musical program by members of physicians' families, and a dance.

NEW MEXICO

State Medical Meeting at Taos, June 12-14.—The New Mexico Medical Society will hold its annual meeting at the Indian pueblo town of Taos, in the northern part of the state, June 12-14, under the presidency of Dr. Carey B. Elliott, Raton. This famous Indian village with its quaint surroundings should help make this one of the most largely attended annual meetings. A vacation can be readily extended from Taos into the Mesa Verde National Park and other parts of Colorado. Among the guest speakers on the scientific program will be the following:

Dr. William P. McCrossin, Jr., Colorado Springs, "Endocervicitis."
Dr. Myron S. Gregory, Oklahoma City, "The Treatment of the Neuroses."
Dr. William Senger, Pueblo, Colo., "The Neglected Perforated Appendix."
Dr. Gottlieb Werley, El Paso, "The Management of Heart Failure and Dropsy."
Dr. William M. Spitzer, Denver, "The End-Results of Prostatectomy."
Dr. Walter E. Sistrunk, Rochester, Minn. (subject not yet announced).
Dr. William Warner Watkins, Phoenix, "Fungus Infection with Special Reference to the Lungs."
Dr. Kelvin D. Lynch, El Paso, "Polycystic Kidney."
Dr. Frank C. Goodwin, El Paso (subject not yet announced).
Dr. Carl Mulky, Albuquerque, "Hodgkin's Disease, with Case Report."
Dr. Mark P. Beam, Albuquerque, "Cerebrospinal Meningitis, with Two Case Reports."
Dr. Leon Rosenwald, Kansas City, "Chancroids and Their Specific Treatment."
Dr. William L. Brown, El Paso (subject not yet announced).
Dr. Casper F. Hegner, Denver, "Surgery of Pulmonary Tuberculosis."
Dr. Karl A. Menninger, Topeka, "Encephalography."

NEW YORK

Summer Course for Medical Students.—The Physicians Hospital of Plattsburgh offers an eight week course this summer in cardionephritis, limited to senior and junior medical students and graduates of 1929. The number will be limited, to preserve intimate contact with patients and instructors. The committee in charge believes the object is something new and aims to make it possible for students to enjoy the intimate relation that was formerly provided in the preceptorship system.

Society News.—The Niagara County Medical Society held its regular meeting, May 14, at the county sanatorium on the Mountain Road, Lockport. The program was presented by members of the staff of the sanatorium and Drs. Ezra R. Bridge, Rochester, who read a paper on "Removal of the Phrenic Nerve in Treatment of Tuberculosis"; Arthur N. Aitken, "Childhood Tuberculosis," and Herbert F. Gammons, "The Discovery of Tuberculosis." Others attending were Drs. Albert E. Russell of the U. S. Public Health Service stationed at Niagara Falls, A. M. Stokes and Perry A. Bly of Rochester. ——The fifteenth session of the Trudeau School of Tuberculosis opened at Saranac Lake, May 13. Among the lecturers were Drs. Edwin A. Locke, Harvard University Medical School, Boston; Austen F. Riggs of Columbia University College of Physicians and Surgeons, New York; George M. MacKee of the New York Post-Graduate Medical School and Hospital; Homer F. Swift, Rockefeller Institute for Medical Research, New York, and Emanuel Libman of Columbia University College of Physicians and Surgeons. Their subjects were, respectively, empyema, mental aspects of tuberculosis, tuberculosis of the skin, allergy and rheumatism, studies in sensitiveness to pain and their application in diagnosis. Dr. Allen K. Krause, Johns Hopkins University, Baltimore, opened the program.—— Dr. Arthur M. Dickinson, Albany, addressed the Medical Society of the County of Albany, May 15, on "Controllable Spinal Anesthesia."——The Oswego County Medical Society was addressed, May 9, by Dr. John H. Wycoff, Jr., New York, on cardiac diseases.

New York City

Hospital News.—The United Hospital Fund distributed $650,000, May 9, to fifty-seven hospital members to aid in the care of needy patients. The fund next fall will open a campaign to raise $1,000,000 to commemorate the fiftieth anniversary of the founding of the Federation of Non-Municipal Hospitals. In these forty-nine years nearly $9,000,000 has been distributed by the fund and its predecessor.

Personal.—Dr. Milton J. Matzner has been appointed to the gastro-enterologic service of the Jewish Hospital, Brooklyn.——Dr. Isidore Henry Alexander has been appointed assistant professor of laryngology at the New York Post Graduate Medical School and Hospital.——John A. Mandel, Sc.D., for many years head of the chemistry department of New York University Medical School, died, May 5, aged 74, of heart disease.——Dr. Charles G. Heyd has been appointed consulting surgeon to the Women's Hospital.——Dr. Alan R. Anderson, Saranac Lake, has assumed his new duties as dean of New York Post-Graduate Medical School and Hospital.——Dr. Robert McConnell has been made an officer in the Legion of Honor in France; the decoration was bestowed by the French ambassador, M. Paul Claudel.

Society News.—The Bronx County Medical Society was addressed, May 15, by Dr. Emil Goetsch on "Clinical Review of Diagnosis and Treatment of Goiter," and Dr. Solomon Ginsburg on "Thyrotoxicosis in Childhood: Early Diagnosis and Radium Therapy."——The Medical Society of the County of Kings, which before enactment of the Sheppard-Towner Maternity Act in 1921 opposed the bill, has expressed opposition to similar legislation which is now pending in Congress, which aims to extend the Sheppard-Towner act several years. Unless new legislation is passed the act will cease to be effective, June 30.——The Medical Society of the County of Queens and the Medical Association of the Greater City of New York held their outing at the North Hills Golf Club, Douglaston, Long Island, May 22, devoting the afternoon to a golf tournament and the evening to a dinner, which was addressed by Dr. James J. Walsh on "Medical Quackery, Old and New," and by District Attorney Richard S. Newcomb on "Relation of the Physician to the District Attorney's Office."——The International and Spanish-Speaking Association of Physicians, Dentists and Pharmacists celebrated its first anniversary, May 20.——The benefit dinner for the Bronx Hospital, May 9, brought to the Hotel Astor $860,000 which the 1,000 persons in attendance subscribed.——Dr. Morris Fishbein, Chicago, editor of THE JOURNAL, will address the Medical Society of the County of New York, May 27, on modern trends in medical practice; Dr. William H. Ross on "Some Thoughts That Seem Facts Regarding the Relationship of Doctors to Health Agencies," and Dr. Orrin S. Wightman, "Results Obtained by the Grievance Committee under the New Medical Practice Act."—— The New York Physicians' Golfing Association held its first tournament, May 7, at the Pomonok Country Club, Drs. Ralph S. Fralick winning the low net prize and Martin L. Sowers the low gross.——Dr. Chevalier Jackson, Philadelphia, lectured at the Fifth Avenue Hospital, May 22, on "Bronchoscopy."—— At a dinner given by the International Medical Club, New York, May 10, Dr. Ernest Meinicke of Hagen, Germany, spoke on a new test for syphilis; his paper was discussed by Reuben L. Kahn, Sc.D., of the faculty of the University of Michigan. Among others guests were Dr. Abernethy Benson Cannon, New York, Ivan Ostronyslensky, formerly of Petrograd, S. Ochi, professor of ophthalmology, Hokkaido Imperial University of Japan, and Dr. Gonzales Aquilar of Spain.

OHIO

Appointments to Medical Board.—The senate has confirmed the following appointments by Governor Cooper to the state medical board: Drs. Thomas H. George, Cleveland, to succeed Lester E. Siemon, Cleveland; J. Fred Wuist, Dayton, to succeed himself, and James G. Blower, Akron, to succeed himself.

State Medical Election.—At the annual meeting of the Ohio State Medical Association, Cleveland, May 9, Dr. Albert H. Freiberg, Cincinnati, was made president; Dr. Chester W. Waggoner, Toledo, president-elect; Dr. Herbert M. Platter, Columbus, treasurer, and Drs. Chester W. Waggoner, Toledo, John P. DeWitt, Canton, and Charles E. Kiely, Cincinnati, delegates to the American Medical Association. The next annual meeting will be in Columbus.

The Cleveland Clinic Disaster.—An explosion in the roentgen-ray film storage room of the Cleveland Clinic, Euclid Avenue and East Ninety-Third Street, Cleveland, May 15, partially wrecked the building and liberated gases which caused the immediate death of ninety-eight persons, including members of the staff, patients, attendants and passers-by who came to assist the injured, and subsequently other deaths which made the total due to the disaster 125 up to May 21. The blast is supposed to have been due to overheating of the films, caused by a leaky steam pipe which a steamfitter was endeavoring to repair at the time of the explosion. The four-story building contained about 100 patients, who were undergoing examination or were in the waiting room. The explosion rocked the building, fire broke out, the skylight, plaster and steel reenforcements collapsed, and a thick, yellowish gas filled the rooms. The gas was so toxic that some of the victims are said to have died within a few minutes, while others died after being taken to hospitals. The gases liberated which caused the sudden deaths have not been officially designated as yet. Some of the widely known members were among the seven on the staff who died. Dr. George W. Crile, founder of the clinic, who was operating at the time of the explosion, was not injured and no damage was done to the Cleveland Clinic Hospital nearby, or to other adjoining buildings.

PENNSYLVANIA

Personal.—Governor Fischer has appointed Dr. William S. Ruch, Carlisle, to be coroner of Cumberland County.—— A farewell dinner was given recently for Dr. and Mrs. Enoch H. Adams of Danville, who have gone to Memphis, Tenn., where Dr. Adams intends to engage in practice.

Society News.—The Dauphin County Medical Society was addressed, May 7, at Harrisburg by Dr. George E. Pfahler, Philadelphia, and George A. Soper, Ph.D., New York, on cancer with exhibition of moving pictures. The society was addressed, April 2, by Dr. Carson Coover on osteomyelitis.—— The Harrisburg Academy of Medicine was addressed, April 16, by Dr. Arthur M. Shipley, Baltimore, on "Evolution of the Lung."——The Medical Club of Harrisburg disbanded, April 17, following a dinner party; the club had been in existence about fifteen years.

Philadelphia

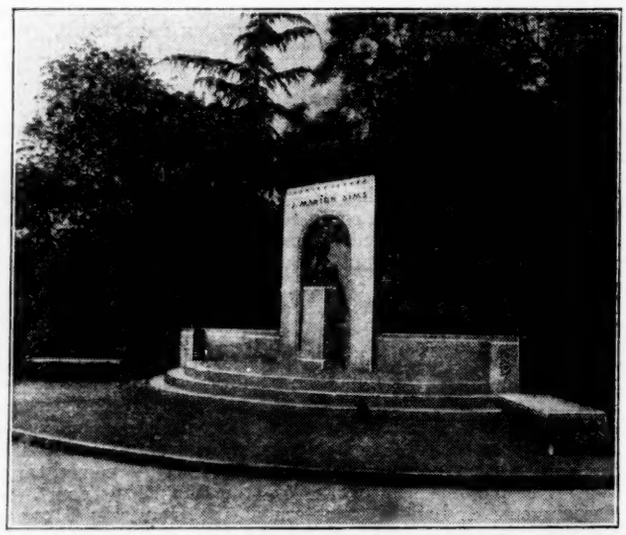
Society News.—The American Physical Education Association has selected Philadelphia as one of three cities, in each of which 10,000 children will be "measured" as to health. This experiment is to determine, if possible, in accurate terms, the children's fitness to meet routine obligations, and whether they are satisfactorily developed muscularly and are normal in their neuromuscular coordination. Other tests will be used to determine their ability to engage in healthful recreation.—— Dr. George P. Muller has been elected president of the Philadelphia County Medical Society for the ensuing year.

Personal.—Dr. Chevalier Jackson was awarded a Cresson medal at the annual presentation of the Franklin Institute.—— Dr. Michael M. Wolfe has been appointed dermatologist to the American Hospital for Diseases of the Stomach.——Dr. Charles W. Burr, professor of mental diseases, University of Pennsylvania, has been appointed head of an advisory committee to supervise the medical work of the municipal court.—— Dr. Eugene M. Landis, an intern at the University Hospital, has been awarded a fellowship by the John Simon Guggenheim Memorial Foundation, New York, to study in London with Sir Thomas Lewis of reactions affecting the minute blood vessels of mammals.

SOUTH CAROLINA

Society News.—The South Carolina Society for Mental Hygiene was addressed at Charleston, May 17-18, by Dr. George K. Pratt, New York, assistant medical director, National Committee for Mental Hygiene, on "Mental Hygiene in the Public Schools"; by Dr. George S. Stevenson of the national committee on "The Child Guidance Clinic," and by Dr. James Heyward Gibbes, Columbia, on "Mental Hygiene in the Practice of Medicine." The York County Medical Society, Rock Hill, at its March meeting discussed pellagra in the United States. Dr. William C. Whitesides, York, stated that he had seen more pellagra last season than at any previous season in his practice.——The Greenville County Medical Society was addressed by Dr. DeWitt Kluttz, March 4, on "Lipoid Nephrosis," and by Dr. George T. Tyler, Jr., on spinal injuries.—— The Fifth District Medical Society, Chester, was addressed, March 26, by Drs. Samuel E. Harmon, Columbia, chairman of the council of the state society, on "A Plea for a More Thorough Systematic Examination of All Patients"; Edgar A. Hines, Seneca, secretary of the state society, on malta fever; Norma P. Dunning, on influenza, and William B. Ward, Rock Hill, on intestinal obstruction.——The Urological Association of South Carolina was addressed, March 26, at Greenville by Drs. Francis R. Hagner, Washington, D. C., on "Sterility in the Male"; Everett E. Herlong, Rock Hill, on "Gonorrheal Septicemia and Arthritis," and Marion H. Wyman, Columbia, on "Gunshot Wounds of the Urinary Tract"; Dr. Theodore M. Davis, Greenville, gave a clinic on resection of the prostate gland.

James Marion Sims Memorial.—At a ceremony on the capitol grounds at Columbia, May 10, a memorial to the late Dr. James Marion Sims was unveiled by James Marion Sims Witherspoon, a grand nephew. The chairman of the memorial committee, Mrs. Henry M. Stuckey, presented the memorial to the state medical society, which then presented it to the state. Governor Richards and Mr. James Rice, Jr., gave addresses. The central portion, about 11 feet high, is flanked with stones which terminate at each end with pilasters, on each of which is a caduceus. Stone benches flank the plaza approaching the monument. The president of the state medical society proposed in 1909 that a statue of Dr. Sims be erected on the capitol grounds. The following year the legislature made an appropriation for this purpose, but the movement did not advance until about 1926, when the women's auxiliary appealed to the people and an organization was formed to carry the project to completion. Born in South Carolina in 1813, Dr. Sims graduated from South Carolina College and attended Charleston Medical School for one year. He then went to Jefferson Medical College, Philadelphia, graduating in 1835, and began practice in Alabama. His paper on the operative treatment of vesicovaginal fistula, published in 1852, Garrison says, created a profound impression and he was called to Europe in 1869 to perform this operation. He moved to New York in 1853 and established the state hospital for women. Other contributions were his methods of amputating the cervix uteri, his description of vaginismus, his operation of cholecystotomy, and "The Careful Aseptic Invasion of the Peritoneal Cavity for the Arrest of Hemorrhage, the Suture of Intestinal Wounds, and the Cleansing of the Peritoneal Cavity, and for all Intraperitoneal Conditions." Dr. Sims was president of the American Medical Association in 1876. He died in 1883. A statue to his memory was erected in Bryant Park, New York, in 1894.



TEXAS

Head of Department Appointed.—Dr. Henry M. Winans, Dallas, has been appointed professor and chairman of the department of medicine at Baylor University College of Medicine. Dr. Winans graduated from Johns Hopkins University School of Medicine, Baltimore, and since 1920 has practiced in Dallas and taught at Baylor University. He will continue to practice.

Bills Introduced.—House bill 73 proposes to levy an annual occupational tax of $50 on itinerant physicians, surgeons, oculists or other "specialists." House bill 139 proposes to amend the medical practice act by providing (1) that the board of medical examiners shall consist of twelve men, to hold office for six years, and (2) that every practitioner of the healing art shall register in the district clerk's office of every county in which he may reside and of every county in which he may practice.

Health at San Antonio.—Telegraphic reports to the U. S. Department of Commerce from sixty-five cities with a total population of about thirty million, for the week ending May 11, indicate that the highest mortality rate (23) was for San Antonio, and that the mortality rate for the group of cities as a whole was 12.9. The mortality rate for San Antonio for the corresponding week last year was 18.7, and for the group of cities 15.2. The annual rate for these sixty-five cities for the first nineteen weeks of 1929 is 16.9 as against 14.4 for the corresponding weeks of last year. Caution should be used in the interpretation of weekly figures, as they fluctuate widely. The facts that some cities are hospital centers for large areas outside the city limits or that they have a large negro population may tend to increase the death rate.

UTAH

Personal.—Dr. Paul R. Weeks has been appointed to take charge of the roentgen-ray and chemical laboratory and physical therapy department of the Thomas D. Dee Memorial Hospital at Ogden. Dr. Weeks formerly held a similar position at the Pattie A. Clay Infirmary, Richmond, Ky., where he was also city health officer.

VIRGINIA

Personal.—Dr. Leta J. White of the Richmond City Health Department has resigned after several years' service to take up postgraduate work in Philadelphia.——John M. Damgaard, formerly of the Juvenile Research Institute of Chicago, has become director of the mental hygiene division of the department of public welfare of Virginia.——Dr. William W. Seward, Surry, has been elected president of the Bank of Dendron.——Dr. Roshier W. Miller has been elected chairman of the school board of Richmond, and Dr. Clifton M. Miller, vice chairman.

University News.—The Medical College of Virginia, Richmond, will confer an honorary degree of doctor of science on Dr. Albert C. Broders, pathologist, Mayo Clinic, Rochester, Minn., May 28.——Harry Bear, D.D.S., will become dean of the school of dentistry of the Medical College of Virginia, July 1, succeeding Robert D. Thornton, D.D.S., who returns to Toronto, Canada, to private practice.——Governor Byrd has appointed Dr. William W. Wilkinson, La Crosse, to the board of visitors of the Medical College of Virginia to succeed the late Dr. Joseph M. Burke.

WISCONSIN

Bills Introduced.—House joint resolution 71 proposes to memorialize the United States Congress to provide adequate medical care and hospital facilities for Indians in the state. House joint resolution 74 proposes to provide for a special joint interim committee to investigate the necessity for a crippled children's hospital.

GENERAL

Progress Against Bovine Tuberculosis.—The U. S. Department of Agriculture announces that the number of counties that completed the campaign against bovine tuberculosis was increased by 219 in the year ending May 1. The total number of counties in the country now designated as "modified accredited areas" is 706. This means that less than 0.5 per cent of the cattle in the county reacted positively to the tuberculin test and that all reactors have been removed. These counties are in fifteen different states. Some packing concerns, the department says, now pay a premium of 10 cents per hundredweight for hogs which come from modified accredited areas, provided they are properly tattooed to indicate their origin.

Sanitary Engineering.—While sixteen colleges in the United States are presenting courses in sanitary engineering, there seems to be a difference of opinion among them as to the fundamental conception of the course. Sanitary engineering courses are really civil engineering courses with certain subjects appended, such as sewage disposal, bacteriology and chemistry of water and sewage, water supplies, and some public health instruction. As the courses are now given, they reflect in most of the institutions the personality of the instructor in charge. In four of the sixteen institutions, the sanitary engineering courses require five or six years' study. There is a variation in the degrees granted for equivalent work. However, the number of graduates is on the increase.

Federation for Hard of Hearing.—The tenth annual meeting of the American Federation of Organizations for the Hard of Hearing will be held at Cleveland, June 24-27. Among others, Dr. Frederick T. Hill, Waterville, Maine, will speak on "What Can the Otologist Offer the Deafened?"; Dr. Augustus G. Pohlman, St. Louis, "Experiments on the Deafened for the Benefit of the Deafened," and Dr. Allen M. Kerr, Pittsburgh, "Values and Limitations of the Audiometer," and J. B. Kelly of the Bell Telephone Laboratories on "Audiometer Technic in the Public Schools." Among the speakers will be Dr. Wendell C. Phillips, New York, founder of the organiza-

tion; Pres. Robert E. Vinson of Western Reserve University, and Dr. William B. Chamberlain, Cleveland. There will be receptions, conferences, public sessions, drives and the presentation of trophies at a banquet.

International Hospital Congress at Atlantic City.—The first International Hospital Congress will be held at Atlantic City, June 13-15. Delegates from at least twenty countries have made arrangements to attend. Questions to be discussed include hospital economics, management, planning, psychopathic hospitals and institutions for the chronically afflicted, the last subject being reported on by Professor Tandler, health commissioner of the city of Vienna. Among the foreign delegates will be René Sand, Belgium; George F. Stephens, Canada; Julius Grober and Joseph Wirth, Germany; J. E. Stone and Mr. W. H. Harper, England; J. E. Brizon and Andre Gouachon, France; W. H. Mansholt, Netherlands; R. T. W. Charlton, South Africa, and Jose E. Lopez-Silvero, Cuba. Delegates from Latin America and South American countries will be present. The secretary general of the congress is E. H. Lewinski-Corwin, Ph.D., New York. The chairman of the international executive committee is Dr. René Sand. The annual meeting of the American Hospital Association follows the international congress. Meetings will be held also of the Children's Hospital Association of America, the American Association of Occupational Therapy, the National League of Nursing Education, the American Association of Hospital Social Workers and the American Protestant Hospital Association. The American Hospital Association will have its headquarters for the meeting at the Ambassador Hotel.

Medical Bills in Congress.—H. R. 2843, introduced by Representative Linthicum, Maryland, proposes to authorize Dr. William S. Thayer and Dr. William H. Welch to accept such decorations, orders and medals as have been tendered them by foreign governments "in appreciation of services rendered." H. R. 2575, introduced by Representative Rowbottom, Indiana, proposes to authorize compensation for persons registered or listed under the selective draft laws for service in the army, navy or marine corps during the World War, who were disabled in line of duty while engaged in training in preparation for such service. H. R. 2856, introduced by Representative Crail, California, proposes to amend the World War Veterans' Act so as to provide hospitalization, without regard to the nature or origin of their disabilities, to citizens of the United States who served with the armed forces of the United States overseas during the World War as civil employees or contract surgeons of the war and navy departments. H. R. 2860, introduced by Representative Schneider, Wisconsin, proposes to authorize the expenditure of $125,000 to build an Indian hospital in Forest County, Wisconsin. H. R. 2944, introduced by Representative Wolverton, New Jersey, proposes to provide free hospitalization and medical treatment in government hospitals for retired enlisted men of the navy and marine corps and for members of the Fleet Naval Reserve and Fleet Marine Corps Reserve who were transferred thereto after sixteen or more years of service. S. 1020, introduced by Senator Blaine, Wisconsin, proposes to amend the federal compensation act by providing that any person employed as a nurse, student nurse or orderly in a tuberculosis ward of any institution operated by the government, who before entering into such employment has been examined and found to have no active or inactive tuberculosis, shall be conclusively presumed to have entered such employment free from tuberculosis, and that tuberculosis subsequently discovered at any time during employment, or within three years after resignation or discharge, shall be presumed to have been contracted in the course of employment. S. 1143, introduced by Senator Caraway, Arkansas, proposes to enlarge, by razing and rebuilding, the army and navy general hospital at Hot Springs National Park, Arkansas.

FOREIGN

Austria Strikes Coin to Honor Billroth.—For the recent celebration of the centenary of Dr. Theodor Billroth of Vienna, the Austrian republic issued a memorial coin in his honor. It was a two shilling piece bearing the legend "Theodor Billroth, 1829-1929." Our correspondent has received one of the coins from Vienna; he believes it is the first time that a nation has made a coin to commemorate a physician, solely for his medical accomplishments.

Prize Awarded General Practitioner.—The council of the British Medical Association, April 3, awarded the Sir Charles Hastings Clinical Prize for 1929 to Dr. Arthur Crook, Norwich, England, for his clinical study on albumin in the urine in association with pregnancy and childbirth. The prize, which consists of an illuminated certificate and a check for 50 guineas (about $250), will be awarded at the annual meeting of the association at Manchester. Dr. Crook's study, which was based on his experience of thirty years in general practice, showed evidence, according to the *British Medical Journal*, of the kind of work for which the prize was designated.

Famine and Disease in Part of India.—Dr. Frank R. Felt, a graduate of Detroit College of Medicine and Surgery, writes from Jubbulpore, India, that there has been a general increase of sickness, partly as a result of an irregularity of the seasons. Untimely rain in the cold weather and the cold wave that affected Europe last winter damaged the crops. Many people have come to the end of their resources. There are fourteen famine relief works operating in this district. Bubonic plague, smallpox, cholera, influenza and much measles and chickenpox are prevalent. The famine conditions, he says, will continue for months until another crop can be harvested.

Government Services

Assignment of New Army Officers

The following lieutenants, on completion of a course of instruction at the field medical service school, Carlisle Barracks, Pa., effective about May 31, will proceed to the station indicated: Stuart A. Cameron, Fort Sheridan, Illinois; Rawley E. Chambers, Fort Benjamin Harrison, Indiana; Frank E. Council, General Dispensary, U. S. Army, Boston; Lester M. Dyke, Fort Snelling, Minnesota; Louis H. Ginn, Jr., Fort Myer, Virginia; Leonard D. Heaton, William Beaumont General Hospital, El Paso, Texas; William H. Lawton, Fitzsimons General Hospital, Denver; Martin T. Meyers, Fort McPherson, Georgia; Clifford V. Morgan, William Beaumont General Hospital, El Paso, Texas; Arthur J. Redland, Fitzsimons General Hospital, Denver; John W. Rich, Fort Totten, New York; Ralph M. Sloan, Fort Bragg, North Carolina; Donald C. Snyder, Fort Des Moines, Iowa; Charles T. Young, Fitzsimons General Hospital, Denver, and Warren M. Scott, Fort Sam Houston, Texas. The following lieutenants on completion of this course will sail from New York about May 28 for San Francisco for assignment to duty as indicated: Thomas W. E. Christmas, Fort Lewis, Washington; Harvey F. Hendrickson, Fort Worden, Washington; William D. North, Vancouver Barracks, Wash., and William V. Wilkerson, Fort McDowell, California. The following lieutenants on completion of this course at Carlisle Barracks about May 31 will proceed to New York for duty at the General Dispensary: Walter S. Jensen, Frank B. Wakeman and Harold W. Kohl.

Veterans' Bureau to Dispense with Interns

It has been decided that the veterans' bureau will no longer appoint physicians for intern duty, but those entering the service originally will be appointed as associate physicians or as physicians. After July 1, there will be several vacancies in the grade of associate physician for which young physicians who recently completed hospital internships may make application. The associate physician's salary is $3,200 a year without allowances, and promotion to the grade of physician at $3,800 a year may be made after three years. Applicants must be graduates of class A medical schools; they must have had a year's internship in an approved hospital, and must not have been graduated longer than five years; except when a military preference is given, they must not have reached their thirty-sixth birthday. A rigid physical examination is also required.

U. S. Public Health Service

Surg. Richey L. Waugh will be relieved from Cobh, Irish Free State, about July 13, and be assigned to marine hospital, San Francisco.——Surg. J. D. Reichard will be relieved from Warsaw, Poland, about June 18, and assigned to the Hygienic Laboratory, Washington, D. C.——Asst. Surg. J. F. Van Ackeren has been relieved from duty at Ellis Island, New York, and assigned to Dublin, Ireland.——Passed Asst. Surg. Ernest E. Huber has been relieved from duty at Washington, D. C., and assigned to Bremen, Germany.——Surg. Joseph Bolten has been relieved from Hot Springs, Ark., and assigned to the marine hospital at Louisville, Ky.——Surg. Hugh de Valin has been relieved from duty at Honolulu and assigned to Hot Springs, Ark., as superintendent, Hot Springs National Park.

Foreign Letters

LONDON

(From Our Regular Correspondent)

April 27, 1929.

The Problem of Radium Supply

The great and increasing attention given to radium in the treatment of malignant disease has been described in previous letters to THE JOURNAL. Last July the government appointed a radium subcommittee of the Committee of Civil Research to examine the radium requirements of Great Britain in relation to the present sources of supply. The subcommittee, which consisted of distinguished physicists and others, with Lord Rayleigh as chairman, has presented a report which has just been published. The following conclusions were reached: Knowledge of the biologic and curative properties of radium for the treatment of cancer and of the technic of its application has advanced rapidly in recent years and has greatly increased, and is likely still further to increase, the amount of radium required for medical purposes in Great Britain. The amount of radium belonging to the government available for medical purposes in England, Scotland and Wales is 2.2 Gm., and the estimated amount believed to be the property of hospitals and private physicians is approximately 22.7 Gm., making a total of 24.9 (roughly, 25) Gm. The amount required to meet existing needs in Great Britain is approximately 50 Gm.; i. e., an immediate addition of about 24 Gm. to the existing stock is required.

Owing to the lack of trained personnel and to the inadequacy of the available hospital accommodation, probably not more than 20 additional grams of radium could be effectively absorbed for medical purposes by the end of 1930. Full advantage can be obtained from a given quantity of radium only when it is constantly in application; i. e., when it can be transferred from one patient to another with a minimum of delay. Such conditions are to be found only in centers possessing the necessary specialist personnel, technical equipment and available beds. There is no common policy between the hospitals in acquiring radium, hospitals buying such quantities as the resources at their disposal or local munificence render possible, with the result that stocks of radium have been acquired for particular localities without reference to the needs of the country as a whole.

There is a pressing need for establishing a central stock of radium and organizing some systematic method for its distribution. Until sources of supply at present unproved or unknown are discovered in the empire or elsewhere, the only source of additional supplies in any quantity is the Belgian Congo. With an organization such as that mentioned, it should be possible to obtain radium for substantially less than the existing market price, as it would be in a position to arrange large purchases spread over a considerable period. Such an organization should be given powers not only to purchase radium for its own purposes but also to act as a buying agent for hospitals and other institutions in this country or for dominion or colonial governments. The subcommittee proposes the appointment of a body of national trustees to buy 20 additional grams of radium element for medical purposes and the appointment of a radium commission to control its custody, distribution and use. The commission should consist of the minister of health, the secretary of state for Scotland, the president of the Royal Society, the president of the Royal College of Physicians of London, the president of the Royal College of Surgeons of England, the chairman of the Central Liaison Committee of Voluntary Hospitals in Scotland and the president of the British Medical Association. The commission should have powers to deal with the custody, distribution and use of all radium held by the trustees, having regard to the advancement of knowledge, the treatment of the sick, and economy of use, and, in particular, to consider and approve plans submitted for the use of radium for the purposes of medical treatment and research, and to make the necessary arrangements for the supply of radium for such uses.

Pure Milk

Sir George Newman, chief medical officer, ministry of health, presiding at the conference of the Certified Grade A Tuberculin Tested Milk Producers' Association, said that they were all public health merchants engaged in endeavoring to get the English people to purchase public health. They were engaged in that enterprise because they believed that the first requirement of a nation was the survival of its people, and that the health of a people depended primarily on its nutrition. Good houses, sound drains, a sufficient and pure water supply, and obedience to the laws of nature and hygiene were increasing, but the foundation of public health was the nutrition of the people. One of the fundamental elements in the nutrition of the human species was the consumption of milk. The only way to obtain a satisfactory national milk supply was by laying down a standard and by asking milk producers of the whole country to raise their standards accordingly. It has been said that what was wanted was a good milk supply for every one, and not a superfine milk supply for a few. As one responsible for the national health, he wanted more and better milk drunk by every one, but that could not come about until pioneers had created public opinion for the setting up and maintenance of a standard.

Outbreak of Smallpox Originating on a Liner Causes International Complications

March 27, the Anchor Line steamship *Tuscania* from Bombay arrived at Marseilles with passengers and crew numbering 1,589. Two members of the crew had, during the voyage, suffered from a malady which appeared to be chickenpox but turned out to be smallpox, and one died from smallpox on arrival at Marseilles. Four hundred passengers left the liner at Marseilles. On arrival at Liverpool some 650 passengers disembarked and information was sent by the Liverpool port authorities to the districts to which they were proceeding for supervision for not less than fourteen days. This practice of supervision has long been adopted in England and now forms part of article 42 of the International Sanitary Convention of 1926. The health authorities in this country proceeded in the ordinary way in regard to notification, isolation, disinfection and supervision of all "contacts." Although vaccination was practiced between Marseilles and Liverpool, forty-five persons from the *Tuscania* (out of 1,589) contracted smallpox, twenty-eight in England and fourteen in Scotland, the three others elsewhere. The number of deaths has been seven, of which six took place in this country, and one, as stated, at Marseilles.

When the *Tuscania* cases occurred, public attention was drawn in France to that incident and also to the prevalence of smallpox of a mild form in England. Naturally, France desired to safeguard herself against the invasion of smallpox from Britain, and action was taken by the health authorities in accordance with the International Sanitary Convention of 1926, which ordered that unvaccinated travelers from England must furnish their names and addresses in France so that they could be kept under supervision until the incubation period had expired. If they furnished evidence of recent vaccination they obtained "free pratique"; if they could not furnish such evidence they were provided en route with a card (sanitary passport) on which their names and addresses were entered, and they could be called on to produce this card and satisfy the authorities of the district they visited that, within the incubation period, they remained free from smallpox. The great bulk of cases of smallpox in England that have occurred in recent years have been mild, and though the *Tuscania* cases were of the more virulent type

formerly prevalent, the number of such cases has, thanks to the precautions taken, been comparatively small.

At first the French authorities ordered that all passengers from England should be vaccinated or produce a certificate of recent vaccination, but this would have proved a serious obstacle to travel and the order was mitigated to that given, in consequence of representations from the British government. The neglect of vaccination in England has no doubt helped to frighten the French authorities, but the danger from a huge unvaccinated population is to a large extent nullified by the thoroughness of the precautions taken by the health authorities whenever a case of smallpox occurs. The patients are immediately isolated in a hospital and all contacts are vaccinated and kept under observation. In this manner the outbreak from the *Tuscania* cases appears to have been brought to an end, for the incubation period for contacts is passed and only the possibility of tertiary cases remains.

The Coming Decline in Population

"With a continuation of present conditions the future growth of population will tend to be at an ever-diminishing rate up to the stage at which births and deaths are equal, the latter thereafter gaining the ascendency, with a consequent decline in population." So states the registrar-general in his statistical review for 1927, just issued. He points out that "the population as a whole is gradually getting older and will continue to do so for many years to come, owing to the heavy falls which have occurred in both fertility and mortality during the past half century." In 1927 there were 484,609 deaths, 246,606 males and 238,003 females, the death rate of 12.3 per thousand being the highest since 1922. The total population, June 30, 1927, was estimated at 39,290,000 persons, 18,804,000 males and 20,486,000 females or 1,403,000 over the 1921 census, so that the population had grown at the rate of 3.7 per cent during the six years. Live births totaled 654,172, or 16.6 per thousand, this being 40,391 less than in 1926, or the lowest on record. The deaths ascribed to cancer during 1927 numbered 54,078, 25,048 males and 29,030 females. For both sexes these numbers are the highest yet recorded.

PARIS

(From Our Regular Correspondent)

April 17, 1929.

The Dental Congress and Exhibit

A dental congress and exhibit was recently organized by the two largest French dental societies, the Association générale syndicale des dentistes and the Syndicat des chirurgiens-dentistes de France. The meetings continued for a week in the vast halls of the Grand Palais. There were addresses, practical demonstrations and lectures on the material and moral interests of the profession, and also a large exhibit of dental equipment. The practical work of organizing the congress, and, more particularly, the exhibit, which was participated in by more than 120 manufacturers, French and foreign, was carried out by the minister of commerce and industry.

The Smallpox Scare in France

The general public became much aroused over certain incidents that occurred in connection with the disembarking at Marseilles of several hundred passengers from Bombay. On the arrival of the British steamer *Tuscania* at Marseilles, March 27, the ship's physician notified the sanitary officials of the port that he had only one sick person on board, a sailor affected with angina scarlatinosa, who had been given antidiphtheria serum and isolated in the infirmary. The sailor was taken to the Hôpital britannique, after which 400 of the 428 passengers disembarked at Marseilles and took a special train for Boulogne, from which port they crossed over to England, and then scattered for many different points. But the sailor sent to the Hôpital britannique in Marseilles was found to be affected with smallpox and he died that evening. It was then learned that in England a number of cases of smallpox had developed among the passengers after they arrived home. No fault could be found with the sanitary service of Marseilles, since international custom requires the acceptance of the declaration of the ship's physician, made on his own responsibility and under oath. But no little anxiety was caused by the thought that a train had crossed France (a special train, it is true) with 400 passengers, many of whom were already infected, as the sequel showed, and who, during their journey, might have been in contact with the personnel of the train or the public in the stations. The train was disinfected but possibly too late. Fortunately, however, up to the present time, after the lapse of three weeks, no cases of smallpox have been reported in France. But all the sanitary services have been on the alert. A second British steamer, the *Mashoba*, likewise from Bombay, reached Marseilles ten days after the first, with two cases of smallpox on board, which were, however, officially declared. The boat was immediately isolated, and the passengers were subjected to a rigorous examination. Those who were not suspected of being infected were allowed to continue their journey by train, being supplied with an international sanitary passport. It appears to have been an especially grave type of smallpox. The French government decided to prohibit British citizens who have not been recently vaccinated, as shown by a certificate, from entering French territory. This measure was, however, repealed within twenty-four hours, following a protest from the British embassy.

International Congress of Women Physicians

The Association française des femmes médecins took the initiative in summoning an International Congress of Women Physicians, which convened in Paris, April 10-15, in the halls of the Institut international de corporation intellectuelle, in the Palais-Royal, under the chairmanship of Madame Dr. Thuillier-Landry. The attendance at the congress reached 270. There were two main topics on the program: "education of children and adolescents on sex matters," presented by Madame Dr. Martindale (England) and Madame Dr. Montreuil-Strauss (France), and "the analgesics of childbirth," discussed by Madame Dr. Doris-Kunckel (Germany) and Madame Dr. Nechcovitch-Voutchetich (Jugoslavia). There were few discussions. The inaugural session was attended by the director of higher instruction and by the dean of the Faculté de médecine de Paris. A number of receptions were organized for the conventionists, not only in the hospitals but also at the Hôtel-de-Ville de Paris and the Palais de Versailles. Lady Barette expressed the gratitude of the visitors for their entertainment.

International Congress of Vacation Colonies for Children

The International Congress of Vacation Colonies for Children was held recently in Pau. Many interesting communications were presented, in which medical questions occupied a large place. Foreign participation was relatively light, because of the large number of international meetings occurring on the same dates. Among the main topics discussed, the following may be mentioned: "medical selection of children, and the indications for a sojourn in the mountains, at the seaside, and in the rural regions, respectively," presented by Dr. Fayon; "the collaboration of the medical practitioner and the school physician in the placement of children in vacation colonies," by Dr. Lucie Comte; "the vacation camps at the spas, or thermal stations," by Dr. Molinéry; "the international exchange of children, and its influence on the promotion of peace conditions," by M. Gradel; "school vacations and tours," by M. Ouvrard, and "the prevention of accidents during vacations," by M. Vimard.

The Education of Backward Children

The psychiatrists appear finally to have succeeded in interesting the sociologists in an educational movement in favor of backward children. The heavy hereditary burdens imposed on the rising generations by alcohol and syphilis, among all modern nations, have increased considerably the number of children of retarded or arrested mental development, among whom one finds a distressing number of subjects unable to adapt themselves to modern social life, and even a considerable number of young criminals. Dr. Toulouse, chief physician of the Hôpital Henri-Rousselle in Paris, for mental prophylaxis, has obtained from the general council of the Seine an appropriation of 2,000,000 francs ($80,000) for the creation of a special service for children. A convention of educators was recently held in Paris to discuss several subjects pertaining to this question. M. Debray, director of the Ecole départementale d'Asnières, discussed the general problem of the education of backward children. M. Guillemain, a teacher, spoke on the rôle of the physician in the organization of schools for backward children. The most interesting discussion developed, under the chairmanship of Dr. Paul-Boncour, on the methods of testing the intelligence. Drs. Fay, Vermelen, M. Gobert, M. Huet and M. Debray took part in the discussion. Madame Claneau, a teacher, presented an interesting paper on drawing considered as a means of determining mental aptitudes in the abnormal. The convention adopted a resolution requesting that a subdepartment for the management of instruction of backward children be created in the ministry of public instruction. One duty of the subdepartment would be to organize throughout the country such a publicity campaign as might be needed in order to acquaint the general public with the need of the detection and early treatment of mental anomalies.

A Theatrical Performance Illustrative of the Dangers of Tuberculosis

The theater, which, together with the motion picture houses, is so often accused of contributing to the undermining of public morals, brings out, from time to time, plays that, on the contrary, serve to inculcate healthy moral ideas or to spread useful prophylactic notions in regard to far-reaching plagues in the field of hygiene or sociology. Forty years ago a well known writer, M. Brieux, at present a member of the French Academy, wrote a play entitled "Les Avariés," in which the central idea was the grave social peril involved in syphilis. The undertaking appeared too daring, and the play was at first prohibited by the police and was played only before invited guests. Later it received, to be sure, full authorization but it did not meet with much success. Two years ago a similar play was staged in Paris, "The Fatal Kiss." The critics recognized the good intentions of the author but pointed out the "naïveté of the play and its lack of dramatic interest. A similar attempt has been made with a play entitled "Vivre," being given at the Théâtre des Arts in Paris, from the pens of MM. Bernard Flürscheim and Loïe le Gouriadec, which received its inspiration from the Comité national de défense contre la tuberculose. The minister of hygiene, M. Loucheur, accorded his patronage to the play, which, in order the more surely to attract the public, had included in its cast the names of some of the most popular actors, including Lugné-Poé, Suzanne Després, and M. and Mme. Pitoeff. The play shows the danger of spreading tuberculosis through marriage and through heredity, if the necessary precautions at the time of the engagement, and later, are neglected. The plot, as is usually the case in pieces of this nature, in rather puerile. One of the characters of the play is a medical sermonizer who sounds his warnings in season and out of season. The play brings out the danger arising from kissing a tuberculous person on the mouth; from conjugal relations with a tuberculous subject; emphasizes the need of removing a child of a tuberculous parent from the home, immediately after birth, and sending it to the country, after first inoculating it with the B C G vaccine. As was natural to expect, the play is not much more than a lecture in the form of dialogue. The audience was courteous enough to sit through the representation in grave silence. It is not likely that many representations will be given. The intentions of the authors are highly commendable but the writing of such a play, if it is to succeed, requires the skill of playwrights thoroughly familiar with the stage.

Deaths

Soon after Dr. Brocq passed on, the death of another eminent representative of French dermatology, Dr. Félix Balzer, at the age of 80, was announced. Balzer had been a pupil of Besnier and Fournier, and spent his whole life in the hospitals of dermatology and venereology (Lourcine, Ricord and St. Louis), where his lectures were highly appreciated. He was president of the Société de dermatologie and member of the Academy of Medicine. Toward the end of his career, gangrene, due to arteritis, necessitated the amputation of a thigh. He was the first (preceding Ehrlich) to use concentrated arsenicals as a remedy in syphilis, and also bismuth salts, which, however, he discontinued, having become discouraged by a number of untoward incidents.

Dr. Ozenne, formerly physician to the Hôpital St. Lazare, another syphilologist of repute, has died, likewise at an advanced age. His studies on syphilis of the uterus have not been superseded.

ITALY

(From Our Regular Correspondent)

April 30, 1929.

New Rules for the Reporting of Induced Abortions

The minister of the home department has recently issued, to the governors, a circular letter concerning the compulsory reporting of abortions and also other measures directed against illegal abortion. The report must be made by the physician within a period of two days in each case of abortion in which he has either given assistance or has been informed of in the practice of his profession. The midwife is not under obligation to report abortions, but by law she must have a physician's cooperation as soon as she learns of anything irregular in the evolution of pregnancy, delivery or the puerperium. The physician who attends a woman in an abortion must make the report to the physician of the province; there persists, however, in this case, the obligation of professional secrecy. The law does not have a statistical scope; it aims mostly to furnish the authorities with the elements necessary to exert an efficient action to check the practice of illegal abortion. Failure to report cases of abortion makes a physician liable to a criminal charge. Judiciary authority gives a governor power to impose sentence in such a case. The governor, in turn, must report the matter to the medical association to which the physician belongs so that necessary disciplinary steps can be taken.

Congress on Industrial Medicine

Under the chairmanship of Professor Castellino of the University of Naples, the eighth National Congress of Industrial Medicine will be held at Naples next October. The following topics are on the program: 1. Work in mines, which will be developed by Professor Ferrannini, clinical physician of Cagliari. 2. Biology and work, by Professor Aiello and Dr. Nebuloni of the Clinic of Work of Milan. 3. Work in the ports, by Professor Castellino.

Death of Professor Majocchi

Prof. Domenico Majocchi died in Bologna recently. He was born in the Province of Rome and was graduated from the University of Rome. He devoted himself to the study of der-

matology and syphilology and, early in his career, was appointed to the chair of dermatology in the University of Parma. He was later appointed to the chair of dermatology at Bologna, where he remained until his death. During almost a half century his school of dermatology gave many dermatologists to the Italian universities and to the universities of other countries. Of his numerous publications the most important are those which deal with purpura annularis telangiectodes, which is also known as Majocchi's disease, with granuloma trichophyticum with kerion and other trichophytoses, with foliaceous rupia and with lupus telangiectodes. A number of his papers consider the anatomy of the skin and anomalies in connection with the skin. His papers also consider subjects related to the history of medicine—Malpighi, mercurial preparations, the spreading of syphilis in Bologna in the time of Charles VIII, and other subjects. For many years Majocchi was president of the Società Italiana di Dermatologia e Sifilografia, and of the Società Medico-Chirurgica di Bologna. He was the inventor of a urethral sound, which bears his name, for the treatment of blennorrhagia.

Results of Prophylaxis Against Rabies

The regulations dictated by the home ministry to the veterinary police for the purpose of obtaining better prophylaxis against rabies are now in effect and have begun to yield results. Statistics on antirabic treatment in several institutions of the kingdom show a progressive decrease in the number of cases of rabies. Whereas, during the first half of 1927, 3,591 persons were bitten by mad dogs, the number decreased to 2,996 during the second half of 1927, and to 2,402 during the first half of 1928. Cases of dog bite from rabid dogs or from dogs suspected of being rabid have shown a decrease of about 33 per cent.

Antituberculosis Organization in Sicily

As the principal foundation of the prophylactic antituberculosis organization in the island of Sicily, the special committee on tuberculosis instituted by the Cassa Nazionale per le Assicurazioni Sociali has recently decided to establish five large hospitals with a capacity of 1,000 beds. This decision was the result of the direct investigations accomplished by representatives of the Cassa in several provinces of Sicily. The hospitals are to be located in Palermo, Messina, Catania, Caltanisetta and Syracuse.

Studies on Genetics and Eugenics

Next September the Italian students of genetics and eugenics will meet in Rome under the chairmanship of Prof. Corrado Ricci. Foreign scientists, who, on the occasion of the annual meeting of the Federazione Internazionale di Eugenica, will be in Rome on that date, will be invited to attend this meeting. Among the speakers, Professor Artom will speak on genetic constitution and the changes that result from the union of different races; Professor Baglioni on somatic and genetic functions; Professor Enriquez on environment and heredity according to the most recent investigations; Professor Pestalozza on sterilization, and Professor Quagliarello of Naples on the influence of nutrition on the characteristics of the offspring. Professor Foà, physiologist of Milan, will illustrate the topic of biologic factors of birth control.

Medical Journey to Milan

A medical journey to Milan, organized by the office of the Italian medical press, was made on the occasion of the scientific exhibition fair. Physicians came from all parts of Italy to attend meetings in the clinical institutions, under the chairmanship of Senator Prof. Umberto Gabbi, clinic physician of Parma. Professor Gabbi spoke on Italian journals of internal medicine and social medicine. Prof. Baldo Rossi of the University of Milan briefly considered the history of the journals which deal with surgery. Prof. Ottorino Rossi, psychiatrist, of the University of Pavia, reviewed the Italian journals on neuropsychiatry, and Professor Alfieri of Milan spoke on the publications which consider obstetrics and gynecology. Both of these speakers ended their remarks by emphasizing the need of diminishing the present number of journals on specialties as a means of improving the quality of the journals. Other speakers reviewed the scientific journals that are related to the several branches of biology and medicine. Following this, several of the congressmen commented on the exhibition of the Italian medical press and on several of the pavilions at the exhibition fair, among them, those of chemical industry, scientific apparatus, food hygiene and mineral waters.

RIO DE JANEIRO

(From Our Regular Correspondent)

April 15, 1929.

Study on Neisseria Perflava from a Case of Cerebrospinal Meningitis

Dr. Lucas Assumpcão recently read a paper before the Society of Biology of São Paulo on the bacteriologic and immunologic study of *Neisseria perflava* which had been isolated from a case of cerebrospinal meningitis. He drew the following conclusions: In the bacteriologic examination of cerebrospinal fluid in which gram-negative diplococci, morphologically similar to meningococci, are found, it is necessary to isolate and identify the bacteria, because, owing to their form and staining properties, they may belong to any of the following species: *Neisseria intracellularis* (meningococcus), *Neisseria gonorrhoeae* (gonococcus) *Neisseria catarrhalis* (*Micrococcus catarrhalis*), and, the most probable, *Neisseria perflava, N. flava* and *N. subflava.* The author's experiments have proved that identification, by means of agglutination, is not possible. The safest process is by means of the fermentation of carbohydrates, in which the meningococcus can only be imitated by *Neisseria subflava.* It ferments only dextrose and maltose, but the cultures of *Neisseria,* especially the first ones, exhibit a yellow coloration. It vegetates at a temperature of 23 C. and shows characteristics in common gelose which differentiate it from the meningococcus. The author's culture technic has given good results. He uses a solid medium with a neutral red indicator. By this means proliferation may be verified in six hours.

Toxicity of Shiga's Vaccine

Dr. Eduardo Vaz recently presented the following conclusions on the toxicity of Shiga's vaccine before the Society of Biology of São Paulo: Vaccine containing 0.25 per cent of formaldehyde, as shown by subcutaneous injection into rabbits, preserves its toxicity for thirty days if it is kept at a temperature of 15 C.; its toxicity decreases slowly from the second to the third week if it is kept at room temperature, and it decreases rapidly at the end of twenty-four hours if kept at a temperature of 37 C. There is no relation between the toxicity caused by the subcutaneous administration of the vaccine and the intoxication observed in rabbits subjected to peroral immunization. It is a matter of variation in individual sensibility. If a 0.25 per cent formaldehyde vaccine is kept at 37 C. for four days, its toxic power is diminished without harming its immunogenic value when it is administered perorally.

A Biometric Study of Infants and Mothers in One Thousand Obstetric Cases

Dr. Annibal Prata of the Hospital Pro-Matre, head of the Dispensary of the "Gaffree-Guile" Foundation, has made a biometric study of infants and mothers, from measurements of the female pelvis in pregnancy and of new-born infants, in 1,000 obstetric cases. He has presented the following conclusions: The average height of pregnant women is 1.52 meters for white women, 1.54 meters for negro women, and 1.50 meters for mulatto women. The average weight of pregnant women on admission to the clinic was 55.417 Kg. for the white women,

61.361 Kg. for negro women, and 56.585 Kg. for mulatto women. After delivery the weight decreased to 50.666 Kg., 53.430 Kg. and 51.912 Kg., respectively. During the puerperal period, pregnant negro women are taller and heavier than pregnant white women, while mulatto women are shorter and heavier than either the black or white women. The general measurements of the female pelvis gave the following averages: interspinous diameter, 22.6 cm.; intercristal diameter, 25.3 cm.; external conjugate, 19.1 cm., and transverse diameter of the outlet, 10.9 cm. Lazary and Prata have prepared the following table on the average pelvic measurements of white, mulatto and negro women:

External Pelvimetry

	Interspinous Diameter Cm.	Intercristal Diameter Cm.	External Conjugate Cm.	Transverse Diameter of the Outlet Cm.
White	23.00	26.22	19.45	10.87
Mulatto	22.11	26.38	19.65	10.89
Negro	21.94	25.00	19.00	10.90

According to the averages obtained by Lazary, the diameters diminish, in general, as the pigmentation of the skin increases. This observation was confirmed by the author's experiments. There is no racial type of pelvis; nor is there a regional type, as shown by a comparison of pelves from several different regions. Pelvic malformations are rare in Brazil. This can probably be attributed to the rareness of rickets. The average length of the fetus is 46.5 cm., and the average weight is 3.18 Kg. The principal fetal diameters presented the following averages: biparietal diameter, 9 cm.; occipitomental diameter, 13.5 cm.; the large cephalic circumference, 35 cm., and the suboccipitobregmatic diameter, 10.45 cm. The variations of the cephalic diameters according to races are as follows:

Fetal Measurements

	Biparietal Diameter, Cm.	Occipitomental Diameter, Cm.	Suboccipitobregmatic Diameter, Cm.
White	9.01	13.21	10.82
Mulatto	8.84	12.76	10.81
Negro	8.42	13.18	10.45
Average	9.00	13.50	10.45

In general the diameters of the fetal head diminish as the pigmentation of the skin increases. The pelvic diameters vary with the cephalic diameters. The duration of labor in primiparas (twenty-four hours fifty-one minutes) and in multiparas (fourteen hours fifty-nine minutes) is longer than the duration observed in the European clinics. The weight of the placenta (666 Gm., including the membrane and the cord), is larger in Brazilian clinics than in European clinics. The average size of the placenta in Brazil is 17 by 14 cm.; the average length of umbilical cord, 51 cm.

Renal Function in Yellow Fever During Convalescence and After Recovery

Dr. J. Castro Teixeira of the Hospital Oswaldo Cruz has reported on renal function in yellow fever during convalescence and after recovery as follows: The majority of the patients who were observed during convalescence had had the benign form of the disease. The patients who were observed after recovery had had the severe form. During convalescence, the tests of renal function showed delay in the elimination of water, disturbance in the dilution and in the capacity of concentration, and good elimination of the sodium chloride and urea used in the tests. The author proved by the tests made that after recovery the kidneys eliminated water normally, that they had the power of dilution and concentration, and that they eliminated the sodium chloride and urea used in the tests. Aldrich and McClure's test in four cases showed a slight tendency of the tissues to be edematous. The phenolsulphonphthalein test during convalescence showed an average elimination of 45.2 per cent of the dye during the first hour. The author proved by means of the phenolsulphonphthalein test that after recovery there was an average elimination of 65 per cent of the dye during the first hour. The results obtained in these tests make the author believe that the renal functions of dilution and concentration, and of elimination of sodium chloride, urea and phenolsulphonphthalein are resumed normally after recovery from yellow fever.

BUDAPEST

(From Our Regular Correspondent)

April 26, 1929.

The Public Health Administration of Hungary

In a recent lecture on social and biologic points of view, George Gortvay stated that not only the physical but also the social, cultural and economic factors of public health administration must be given attention by social hygienists and physicians in general. He said that in the future the main function of public health activity should be the prevention of disease, and that medical training ought to be changed so that every university professor in his clinical lectures would deal not only with the nature of diseases but also with their prevention. He deems it important that special departments for public health education should be established in the health ministry. Dealing with the fight against tuberculosis, he concluded that prevention would eliminate sanatoriums and improve the health conditions of all families. He suggested a study of the types of meals of the Magyar folk and their technic of cooking, and an endeavor to improve their inadequate carbohydrate and fat diets by stimulating them to consume more vegetables, fruits and milk. He also dealt with the vitality and growth of the Magyar folk and came to the decision that the biologic power of the country ranks high. In the fight against the "one child" system he suggested that mentally sound, knightly families with several children be induced to settle in the "one child" regions in an attempt to overcome prejudice against large families. In a similar way, in the fight against alcoholism he suggested that the youth be educated concerning the pernicious effects of alcohol. He said that the best prophylactic against artificial abortions would be to demand that all pregnancies be legally reported by physicians and midwives, and to require the district medical officers to see that all pregnant women were given any necessary material support. In the Hungarian lowland (about a third of the territory of the country) the mortality of children is appalling. From 30 to 40 per cent of all infants die as a result of the ignorance of the mothers, adverse dwelling conditions and deficient nutrition. Cancer has shown a rise of 25 per cent in Hungary since 1925, and twice as many people are dying from rheumatic diseases as from infectious diseases. He appealed to physicians to deal with special Hungarian hygienic problems individually; it is unwise, he said, to expect the state to do all public health work. Every physician, in the sphere of his clientele, should regard it as his duty to solve public health problems, as should every village, town and city.

Albuminuria from the Standpoint of Life Insurance

Dr. Karl Vajda, senior physician to the oldest and foremost Hungarian life insurance company, in a lecture recently held before the Royal Medical Society stated that it was important to determine the blood pressure in every case of albuminuria. From the standpoint of life insurance, albuminuria, in which there is a noticeable increase in blood pressure, is a disorder liable to shorten life. In many cases the customary clinical, chemical and microscopic examination may not detect albuminuria. This has led to functional examination of the kidneys. In this field cryoscopy, as inaugurated by Prof. Alexander

Korányi, is of value, as are likewise the iodine, lactose, urea and salt excretion tests, but they require several days of clinical observation and thus are not feasible. Nor are they necessary from the standpoint of life insurance, e. g., the decision as to whether the kidneys excrete sodium chloride well or not, because this has a decisive bearing only in albuminuria connected with edema. Complicated analyses can be carried out only in laboratories. There is, however, a simple and reliable kidney test, the water test, which can be carried out by every country practitioner. If, after the imbibing of a certain quantity of water, urine of low specific gravity (from 1.002 to 1.004) is voided, and after the restriction of water the specific gravity rises to 1.020 or 1.025, it is certain that the kidneys are able to adjust themselves to the varying metabolism. This is important from the standpoint of life insurance, because if the kidneys can adjust themselves to changes it is evident that there is no functional disorder present to menace the life of the individual. In almost every case of albuminuria, insurance of shorter duration is advisable.

The Uterine Hemorrhages of Child-Bearing Women

Dr. Sándor Schurger, clinical assistant, considered in a recent lecture the uterine hemorrhages of child-bearing women. In 20 per cent of cases they are provoked by malignant, and in 80 per cent by benign, processes. Myomas cause hemorrhages when they develop submucously, and in other foci when they are quite large. Hemorrhages are fairly frequent in cancerous conditions of the ovaries and are rare when connected with benign ovarian tumors. They occur only with extremely large benign tumors and are often due to pelvic congestion in combination with blood vessel changes. Polyps are also a common cause of hemorrhage. The hemorrhages of the menopause cannot always be regarded as being due to a malignant condition, as they may be an accompanying manifestation of an ovarian tumor. Clinically, a benign adenoma in the child-bearing age may be considered premalignant. Curettage of the uterine cavity is important in establishing the cause of hemorrhage.

Childbirth of an Abyssinian Woman

A zoological circus brought to Budapest an Abyssinian troupe consisting of men, women and children, who displayed their customs, their manner of living and their martial games in a special show. The police requested the manager to provide a medical inspector for all shows, and thus it was possible for Dr. László Rosenberg to witness an Abyssinian childbirth, which he has described in the *Gyógyászat*. He offered his services to the parturient woman, but she refused them. He was permitted, however, to watch the entire process.

The woman was tall, strongly built and black. She was 20 years of age. Her pelvis was fairly broad. She was placed in a small room which had been soiled with dirt, flies and the like. In the middle of the floor a mat rug was covered with sand. The parturient woman squatted on the sand or stood up, and now and then showed that she felt pains, although she kept silent during the entire course of labor. There were four negro women in the room, one of whom was the midwife. She was not a professional midwife, however, and did not get any reward for her services. She worked from a feeling of duty and was greatly revered and esteemed by her people. The midwife sat on the mat with outstretched legs. Opposite, on her own legs, the childbearing woman sat in such a way that she leaned back on the feet of the midwife. She was wearing a red shirt marked with black figures. About her sat three negro women; one was at her right side and another at her left. When she had intense pains she clung to their necks and at the same time these women rose up from their squatting positions, so that the whole upper part of the body of the parturient woman was raised from the mat. The third woman exerted pressure on the sacral region of the woman in labor.

The midwife, seeing that expulsion of the fetus had begun, lifted up a razor-like knife, which was lying on the floor near her, and after pouring a spoonful of clay on it, performed a regular episiotomy. (This was necessary as the vagina was closed. It is a custom with the Abyssinians to sew the vagina of every 9 year old girl in such a way that they cut off the clitoris, and scale off a part of the skin and mucous membrane from the adjacent lips; they then press the lips together, and, starting from above and proceeding downward, insert thorns, which they bind with vegetable thread. The lips then grow together and the thorns are removed. Only two small openings remain: one at the urethra; the other at the vaginal orifice. When a woman marries the vagina is cut open the length of one thorn-distance. The remainder of the sewed part does not burst even during the expulsion of the fetus. The child is born through the opening made by the episiotomy. After childbirth the vagina is again sewed with thorns, and the thorns are bound together with ordinary black thread. The vulva is not covered with hair; epilation is done in early girlhood.) Delivery continued in such a manner that the two women, squatting behind the parturient woman, shook her quite vigorously, while the third one pressed strongly on the sacral region with her knee. This procedure had effect, for the child was born into the hands of the midwife within a few minutes.

The umbilical cord was ligatured with a band cut from a soiled napkin. Two loops were made: one near the abdominal wall and another directly beside this, and the cord was cut between the two loops with a razor. This happened within a few minutes after the birth of the child. Afterward the midwife tied another loop (3 cm. from the first one) on the umbilical cord, wiped the eyes of the child (a boy) with her index finger, then wiped him with a rag and handed him to one of the women, who began to shape his head vigorously with her hands.

The midwife then went back to the parturient woman, who now did not seat herself on the legs of the midwife but on a turned up wash basin, holding her thighs wide apart. Opposite, the midwife seated herself on the floor, kept the vagina open with her toes, and put her right hand into the vagina, meanwhile supporting herself by placing her left hand on the floor. She was waiting for the placenta. Two hours passed and the placenta had not been delivered. The midwife then became a little restless. Dr. Rosenberg again offered his assistance, which was refused. After a while she asked for some matches; lit one, blew it out and suddenly held the glowing end under the patient's nose. Six matches were used in this way. The patient sneezed and coughed violently, but the placenta did not appear. The midwife then took a straw and tickled the patient's nose, which made her sneeze and cough, but the placenta still did not appear. Glowing coals were then brought and some herbs and roots were strewn on them. The patient covered her head with a cloak, and inhaled the suffocating fumes. This acted as an emetic. Shortly afterward the placenta was born. Thereupon the patient's abdomen was wrapped up tightly, and her thighs tied together.

Dr. Rosenberg called on her the next day and saw her walking in a slipshod manner on account of her thighs being tied together. The midwife explained that this was necessary to assure undisturbed healing of the episiotomy wound, without forcing the patient to stay in bed. The patient was given a cup of milk and some minced lamb's meat. She had no rise in temperature and her pulse was normal. She did not regard what had happened the day before as a great event. She held the razor, with which the umbilical cord had been cut, in her hand. It is their custom to carry it in one of their pockets as long as the umbilical cord remains attached. The part of the umbilical cord between the two loops is cut off after three days. Afterward a longer piece is tied between two loops, which is cut off after fourteen days. The rest of it falls off without any intervention.

BERLIN

(From Our Regular Correspondent)

April 20, 1929.

The Congress of the German Society of Internal Medicine

This year, the Gesellschaft für innere Medizin and the Gesellschaft für Kinderheilkunde met in Wiesbaden on overlapping dates, in order that thus an opportunity might be offered for collaboration in the treatment of the subject of "The Combating of Infectious Diseases." The first papers dealt with protective inoculation and therapeutic serum treatment in measles, scarlet fever and diphtheria. Professor Neufeld of Berlin discussed the experimental bases. Protective inoculation against diphtheria is based on the experiments of Behring with toxin-antitoxin mixtures. In spite of the fact that the natural defense forces rest on a different basis from acquired immunity, they are none the less important. In diphtheria, a single inoculation is not sufficient; the effect is increased by the second and third injections. The first injection brings about only a sensitization. The resorption of a toxin spread over a longer period is more effective than the sudden injection of a large dose. The use of an anatoxin also is effective. In scarlet fever, too little attention was formerly paid to the researches of Moser and Garbitschewsky on the streptococcus. The Drs. Dick (husband and wife) and Dochez in America have successfully developed the streptococcus theory through utilization of the Schick test and the blanching phenomenon. The action of the toxin is neutralized also by convalescents' serum. The scarlet fever streptococci cannot be differentiated from other hemolytic streptococci, nor is the scarlet fever toxin confined to them. The essential thing is that the toxin acts only on the susceptible mucous membrane. The virus is a genuine toxin; the therapeutic serum is a genuine antitoxin, but it acts possibly in part as an allergen. With attenuated streptococci, an antiinfectious serum that protects mice against scarlet fever streptococci may be prepared. It is possible also that certain types play a part in connection with the protective substances. In measles, inoculation after the Degkwitz method has proved effective, but active immunization would be of more value, since every person is susceptible.

Professor von Pfaundler, clinician, of Munich, presented the official paper on measles. Ten years ago, Degkwitz was able to protect children who had been inoculated with measles against the development of the disease by the intramuscular injection of the blood serum of measles convalescents, and he has worked out this procedure in a systematic manner so that it has become a convenient and reliable method. From the schema of the biology of measles, it may be assumed that this serum, when it is obtained on the seventh day following defervescence, contains not only specific lysins but also antitoxins. There is some doubt as to the therapeutic value of the serum, and also the prophylactic value of the various animal serums is open to question. In order to be able to combat measles effectively on a large scale, a serum which confers only passive immunity and which can be procured only in limited quantities does not suffice. What is needed is specific, active immunization. Of late, by means of simultaneous injection of serum, a partial check or a late check in active immunization is possible and is being employed to a certain extent. The question as to the causative agent is still unsolved, and hence all attempts at immunization by means of cultures or conserved substances have, for the present, only theoretical interest. Likewise, the use of measles toxins is still in the experimental stage.

Professor Schottmüller of Hamburg, in discussing scarlet fever, emphasized that, in spite of the convincing toxin-antitoxin experiments of Dick and Dochez, the etiology still remains an unknown factor. Diagnostically the Dick test and the blanching phenomenon with immune serum have proved their value. A mortality of 2 per cent in 850 cases of scarlet fever in which serum treatment was employed is less convincing than a comparison of the mean fever curves of two groups of patients treated, respectively, with and without the serum, together with possible sudden improvements observed after injection of the serum. In the eruptive stage, a good reaction to the toxic effects of the disease is secured, even in severe cases. The serum does not help, however, against complications and the second period of the disease, since it has only slight bactericidal action.

Prof. U. Friedemann of Berlin, in dealing with diphtheria, brought out that serum therapy does not give satisfactory results in the most severe cases of diphtheria. Therefore, great importance must be attached to active prophylaxis. Statistics of protective inoculation in the United States show, on homogenous subjects, that the percentage of inoculated persons who contract the disease is much lower than that of the noninoculated. However, he himself had seen twenty-five children with diphtheria among those inoculated, twelve of whom were gravely ill and four of whom subsequently died. Of 100,000 children inoculated in Berlin, 190 contracted the disease. The reasons for this relatively large number may lie in the severity of the epidemic; possibly also in the method of inoculation and in the choice of the subjects. Underneutralized vaccines, such as are recommended by Behring, are preferable to those that have been overneutralized. They are much more effective in animal experimentation than neutral mixtures. The toxin-antitoxin mixtures are entirely harmless. Ramon's anatoxin does not contain toxins or horse serum and produces a greater and more prompt immunizing effect, but should be used in children under 8 years of age. It may well be considered whether or not intralumbar application of serum therapy would be an improvement in view of the fact that the toxin affects the central nervous system.

During the discussion, Professor Degkwitz of Greifswald expressed himself to the effect that the serum of adults acts in a manner quite similar to that of convalescents. Animal serums suffer from the disadvantage that they cannot be standardized. The causative agent of measles is possibly a filtrable virus, but it is not likely that it is a reinvigorated streptococcus, as Tunicliff holds. According to Prof. Selma Meyer of Düsseldorf, scarlet fever is a hypersensitization reaction to streptococci. The sensitization is brought about by repeated mute infections. The allergy is, however, only one side of the predisposition to scarlet fever; the other is the constitutional assailability. Immunity is the end-result of anaphylaxis. Stroessner of Budapest emphasized that with a pure streptococcus vaccine very successful protective inoculations may be carried out. The Dick test is an indispensable diagnostic measure. Gorter of Leyden stressed in diphtheria the advantages of anatoxin—it is easily titrated and completely atoxic. It is well borne also by adults and older children. In the case of children between the ages of 1 and 5, it is advisable to immunize them three times at the prescribed intervals. Basch of Vienna referred to the efficacy of the diphtheria serum in all cases in which the disease is not malignant. The malignancy is based on constitutional factors and 90 per cent of the cases are fatal. The mortality of diphtheria in children between the ages of 6 and 10 is still about 20 per cent. Löwenstein's vaccine and the anatoxin have given good prophylactic effects, since in Austria toxin-containing mixtures are prohibited. Reye of Hamburg stated that in his city from 90 to 100 children out of 100,000, without protective inoculation, contracted diphtheria. Jürgens of Berlin is not convinced of the good effects of diphtheria prophylaxis nor of serum therapy in scarlet fever. Otto of Berlin regarded improvements in anatoxin desirable, although the dangers of anaphylaxis are overestimated. Fritz Meyer of Berlin was able to produce scarlet fever by means of killed streptococci from a phlegmon. Basch of Vienna pointed out that the preventive scarlet fever serum dose lies close to the therapeutic dose, and that some children who give a negative Dick test contract the disease.

(To be continued)

Marriages

EDWARD E. BROWN, Traverse City, Mich., to Miss D. Ann Miller of Parkersburg, W. Va., May 5, at New York.

HOMER WHEELER HUMISTON, Chicago, to Miss Katharine Frances Zener of Philadelphia, April 29.

JOHN ELWOOD MAINES, Gainesville, Fla., to Miss June Gill of Lynchburg, Va., May 4.

STANLEY WORDEN, Dover, Del., to Miss Victoria Vaiden of Baltimore, May 7.

Deaths

John Phillips ⊕ director of medicine of the Cleveland Clinic Hospital, died, May 15, in the Cleveland Clinic disaster. Dr. Phillips was born in Ontario, Canada, Feb. 19, 1879, and graduated from the University of Toronto Faculty of Medicine in 1903. Following graduation, he was an intern and resident physician at the Lakeside Hospital, later becoming assistant and associate visiting physician. At various times, Dr. Phillips served as demonstrator of anatomy, demonstrator of medicine, instructor in medicine, and assistant professor of medicine and at the time of his death, was assistant professor of therapeutics at Western Reserve University School of Medicine. He was formerly on the staffs of the Rainbow Hospital for Crippled Children, St. John's Hospital, Maternity Hospital and the Babies' Dispensary Hospital. Dr. Phillips was a founder and trustee of the Cleveland Clinic Foundation; he served during the World War; was a member of the American Gastro-Enterological Association and the American College of Physicians and in 1922 was president of the Cleveland Academy of Medicine.

Charles **Edward Locke, Jr.** ⊕ died, May 15, in the disaster at the Cleveland Clinic, where he was a member of the staff. Dr. Locke was 33 years of age; graduated from the University of California Medical School, San Francisco, in 1920, and was a member of the Central Neuropsychiatric Association. He had already made several important contributions to the advancement of surgery of the brain and nervous system.

George **Wilson Belcher** ⊕ died, May 21, at the Mount Sinai Hospital, Cleveland, of pneumonia, as the result of exposure to gases in the disaster, May 15, at the Cleveland Clinic, where he was a member of the staff. Dr. Belcher was 33 years of age; graduated from the Washington University School of Medicine, St. Louis, in 1919, and was a member of the American Urological Association.

Ferris Victor Langston, Windfall, Ind., died, May 15, in the disaster at the Cleveland Clinic, where he was formerly a resident physician. Dr. Langston was 26 years of age, and graduated from the Indiana University School of Medicine, Indianapolis, in 1927.

Harry Martin Andison ⊕ died, May 15, in the disaster at the Cleveland Clinic, where he was a resident fellow. Dr. Andison was 30 years of age, and graduated from the University of Manitoba Faculty of Medicine, Winnipeg, Man., Canada, in 1924.

Edgar Sherman Hunter died, May 15, in the disaster at the Cleveland Clinic, where he was a resident fellow. Dr. Hunter was 27 years of age, and graduated from the Western Reserve University School of Medicine, Cleveland, in 1926.

Roy Arthur Brintnall ⊕ died, May 15, in the disaster at the Cleveland Clinic, where he was a member of the staff. Dr. Brintnall was 44 years of age, and graduated from the Cleveland College of Physicians and Surgeons in 1911.

Richard Godfrey Brodrick ⊕ San Francisco; Cooper Medical College, San Francisco, 1892; professor of hospital and health administration, Stanford University School of Medicine; past president of the American Hospital Association; entered the navy as assistant surgeon with the rank of junior grade in 1893 and retired as past assistant surgeon in 1899, for incapacity resulting from an incident to service; in 1898 received the congressional medal of honor for services with Dewey in Battle at Manila Bay; health officer of San Francisco, 1908-1914, superintendent of San Francisco Hospital, 1914-1919, director of hospitals of Alameda County, and consultant to the Highland Hospital, Oakland, 1919-1927, and since 1927 superintendent of the Stanford University hospitals; consultant in planning hospitals, including San Francisco Hospital and Highland Hospital, Oakland, and others; on the editorial staff of *Modern Hospital;* aged 58; died, May 2, of heart disease.

Herbert Codman Clapp ⊕ Brookline, Mass.; Harvard University School of Medicine, Boston, 1870; instructor in auscultation and percussion, 1877-1885, professor of diseases of the chest, 1885-1915, and since 1915 emeritus professor, Boston University School of Medicine; on the staff of the Massachusetts Homeopathic Hospital, Boston, and formerly on the staff of the Massachusetts State Sanatorium for Incipient Consumptives, Rutland; author of "Auscultation and Percussion" and other books; aged 83; died, April 30, at Boston, of nephritis, following an operation on the prostate.

Thomas Waterman Huntington ⊕ San Francisco; Harvard University Medical School, Boston, 1876; Chairman, Section on Surgery of the American Medical Association, 1911-1912; member and past president of the American Surgical Association; emeritus professor of surgery, University of California Medical School; served during the World War; at one time member of the city board of health; formerly on the staffs of St. Luke's Hospital, St. Joseph's Hospital and the University Hospital; aged 80; died, April 19, of pyelitis, following a prostatectomy.

Benjamin Knox Rachford ⊕ Cincinnati; Medical College of Ohio, Cincinnati, 1882; professor of dispensary instruction, and formerly demonstrator in bacteriology, professor of physiology, materia medica and therapeutics and pediatrics at his alma mater; past president of the staff of Cincinnati General Hospital; author of "Diseases of Children," and "Neurotic Disorders of Childhood"; aged 71; died, May 5, of uremia and chronic nephritis.

Jason Daniel Brownson ⊕ Monona, Iowa; Northwestern University Medical School, Chicago, 1896; served during the World War; formerly secretary of the Clayton County Medical Society; aged 61; died, April 22, after resection of part of the small intestine following embolism of the mesenteric artery.

Henry H. Davis, Toms River, N. J.; Jefferson Medical College of Philadelphia, 1879; formerly president of the board of health, member of the school board, and for twenty-six years chief medical inspector of public schools in Camden; aged 78; was killed, April 10, when struck by an automobile.

Hubert H. Isaacs, Waveland, Ind.; Louisville and Hospital Medical College, 1908; Eclectic Medical College, Cincinnati, 1910; member of the Indiana State Medical Association; aged 43; died, April 10, at the Union Hospital, Terre Haute, of injuries received in an automobile accident.

John T. Rudden, Bellows Falls, Vt.; University of Vermont College of Medicine, Burlington, 1892; member of the Vermont State Medical Society; formerly health officer; on the staff of the Rockingham General Hospital; aged 62; died suddenly, March 10, of myocarditis.

Samuel Edwin Cruse ⊕ Iron Mountain, Mich.; Rush Medical College, Chicago, 1895; past president and secretary of the Dickinson-Iron County Medical Society; formerly mayor; on the staff of the Iron Mountain General Hospital; aged 57; died, April 30, of heart disease.

Murdoch Lee Crum ⊕ Arcadia, Fla.; Chattanooga (Tenn.) Medical College, 1907; past president and secretary of the De Soto County Medical Society; formerly on the staff of the Arcadia General Hospital; aged 55; died suddenly, February 17, of heart disease.

Marcus C. Wright, Knoxville, Tenn.; Tennessee Medical College, Knoxville, 1905; member of the Tennessee State Medical Association; aged 55; died, March 30, at the University of Pennsylvania Hospital, Philadelphia, of injuries received in an automobile accident.

Anthony Paul Brady ⊕ Painesville, Ohio; Baltimore Medical College, 1898; past president of the Lake County Medical Society; formerly on the staff of the Lake County Memorial Hospital; aged 58; died, April 28, of coronary sclerosis and angina pectoris.

Edward P. Snipes, Jonesboro, N. C.; Vanderbilt University School of Medicine, Nashville, Tenn., 1890; member of the Medical Society of the State of North Carolina; aged 76; died, April 30, at the Central Carolina Hospital, Sanford, of cerebral hemorrhage.

James Morton McLaughlin, Woodbine, Tenn.; Medical Department University of Tennessee, Nashville, 1892; member of the Tennessee State Medical Association; aged 68; died, April 10, of injuries received when struck by an automobile.

Philip George Becker, Bellport, N. Y.; Medical Department of the University of the City of New York, 1890; member

of the Medical Society of the State of New York; aged 65; was found dead, May 2, of a self-inflicted bullet wound.

Eugene Robinett Smith, Section, Ala.; University of Nashville (Tenn.) Medical Department, 1867; member of the Medical Association of the State of Alabama; Confederate veteran; aged 85; died, March 28, of cerebral hemorrhage.

Walter Joseph Campbell, Brooklyn; Long Island College Hospital, Brooklyn, 1899; member of the Medical Society of the State of New York; on the staff of the Samaritan Hospital; aged 57; died, April 20, of chronic myocarditis.

Torrance John Hanlon ✠ Monongahela, Pa.; University of Pittsburgh School of Medicine, 1914; served during the World War; on the staff of the Monongahela Memorial Hospital; aged 42; died, April 22, of pneumonia.

Charles Stein Dunn, Haverhill, Mass.; Harvard University Medical School, Boston, 1883; member of the Massachusetts Medical Society; aged 69; died, January 6, of chronic myocarditis, nephritis and cerebral hemorrhage.

Frank Webster Jay, Evanston, Ill.; Rush Medical College, Chicago, 1890; formerly associate professor of surgery at his alma mater; veteran of the Spanish-American War; aged 61; died suddenly, May 12, of angina pectoris.

Carlisle Franklin Ferrin ✠ New London, Conn.; Columbia University College of Physicians and Surgeons, 1895; on the staff of the Lawrence and Memorial Associated Hospitals; aged 61; died, May 6, of angina pectoris.

Henry Parson Hamrick, Eatonton, Ga.; Medical Department of Emory University, Atlanta, 1916; member of the Medical Association of Georgia; aged 45; died, April 23, in a hospital at Macon, of angina pectoris.

Joseph Barsky ✠ New York; Medical Department of the University of the City of New York, 1893; aged 63; on the staff of the Beth Israel Hospital, where he died, April 19, of lymphosarcomatosis and myocarditis.

Harvey Bruce Summerville, Rimersburg, Pa.; College of Physicians and Surgeons, Baltimore, 1890; served during the World War; aged 66; died, April 2, at the Presbyterian Hospital, Pittsburgh, of pneumonia.

Jacob Aronson ✠ New York; Long Island College Hospital, Brooklyn, 1914; on the staffs of the Bronx Hospital and the New York Post-Graduate Hospital; aged 37; died suddenly, May 5, of heart disease.

John D. Shannon ✠ Greenfield, Tenn.; University of Louisville (Ky.) School of Medicine, 1890; aged about 65; was killed, April 25, when the automobile in which he was driving was struck by a train.

Michael Iversen ✠ Stoughton, Wis.; University of Oslo, Norway, 1890; on the staff of the Stoughton Community Hospital; aged 67; died, April 22, in Madison, of cerebral hemorrhage.

Ira Clark Hill, Springfield, Mass.; University of Vermont College of Medicine, Burlington, 1884; member of the Massachusetts Medical Society; aged 70; died, May 7, of heart disease.

Thomas Joseph Kelly, Newark, N. J.; University of Vermont College of Medicine, Burlington, 1907; aged 45; died, April 22, at the City Hospital, of heart disease and nephritis.

George Burton French, Concord, Vt.; Eclectic Medical College of the City of New York, 1883; formerly member of the state legislature; aged 71; died, March 9, of uremia.

William Benjamin Wood, Tannersville, N. Y.; Medical Department of the University of the City of New York, 1881; aged 78; died, March 16, at Pittsburgh, of pneumonia.

David William Reed, Clearfield, Iowa; Keokuk Medical College, 1894; member of the Iowa State Medical Society; aged 61; died, April 16, of cerebral hemorrhage.

James Raymond Sanford ✠ Newark, N. Y.; Syracuse University College of Medicine, 1909; served during the World War; aged 42; died, Dec. 20, 1928.

William H. Roasberry, Ashland, Ohio; Hahnemann Medical College and Hospital, Chicago, 1885; aged 74; died in April, at Columbus, of senility.

James Eddington Connett, Lawrenceville, Ill.; Indiana Eclectic Medical College, Indianapolis, 1883; aged 67; died, April 29, of heart disease.

Cyrus B. McColm, Council Bluffs, Iowa; Northwestern Medical College, St. Joseph, Mo., 1883; aged 74; died, April 28, of heart disease.

Bureau of Investigation

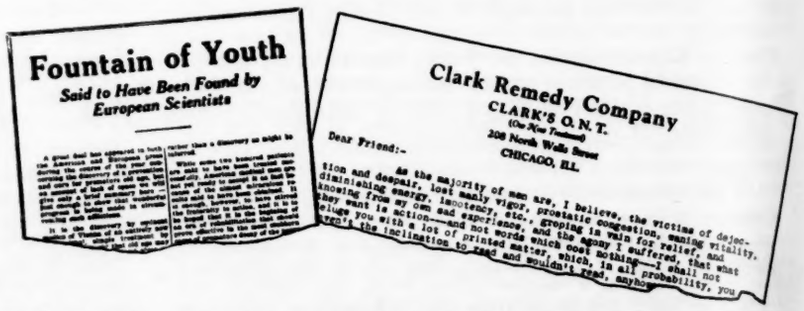
THE CLARK'S O. N. T. FRAUD

The Postal Authorities Close the Mails to a Piece of Chicago Quackery

Nathan C. Collins and William Gilchrist, according to the evidence presented by the Solicitor of the Post Office Department, exploited an alleged cure for impotence under such trade names as the "Clark Remedy Company," "Clark's O. N. T." and "Nate Clark." In addition, Collins also used the trade names "Madge Laboratory" and "C. C. Nathan" in exploiting a similar product, "Old Madge's Vita," for the same purposes as "Clark's O. N. T." Collins and Gilchrist got the names of prospective victims through concerns that make a business of renting and selling "sucker lists." To such prospects a circular-letter was sent, reading in part as follows:

"As the majority of us are, I believe, the victims of such afflictions as general debility, dejection and despair, lost manly vigor, prostatic congestion, waning vitality, diminishing energy, impotency, etc., and their kindred scourges, rheumatism and neuritis, groping in the dark for relief, and knowing from my own sad experience, and the agony I suffered, that what they want is action—and not words which cost nothing—I shall not deluge you with a lot of printed matter, which, in all probability you haven't the inclination to read and wouldn't read under any circumstances."

"I am sending you herewith a trial of CLARK'S O. N. T. (OUR NEW TREATMENT) without a cent of cost to you—without even your having to write for it—and I am going to let it speak for itself, believing that its almost magic effect will convince you beyond the peradventure of a doubt of its efficacy and that its continued use will do for you what it has done for me; candidly, it has given me a new lease on life, and silhouetted my declining years with a roseate hue when truly I had despaired of ever being a live-wide-awake man again."


Fountain of Youth

Said to Have Been Found by European Scientists

Clark Remedy Company

CLARK'S O. N. T.

(Our New Treatment)

208 North Wells Street

CHICAGO, ILL.

Dear Friend:—

As the majority of us are, I believe, the victims of dejection and despair, lost manly vigor, prostatic congestion, waning vitality, diminishing energy, lost manly vigor, prostatic congestion, waning vitality, diminishing energy, impotency, etc., and their kindred scourges, rheumatism and neuritis, groping in the dark for relief, and knowing from my own sad experience, and the agony I suffered, that what they want is action—and not words which cost nothing—I shall not deluge you with a lot of printed matter, which, in all probability you haven't the inclination to read and wouldn't read, anyhow,

In the course of the follow-up letters there was one referring to an alleged "Fountain of Youth Said to Have Been Found by European Scientists." This "Fountain of Youth" was "Old Madge's Vita," described as a widely-known remedy for such afflictions as dejection and despair, lost manly vigor, prostatic congestion, waning vitality, diminishing energy, impotency, etc." As in the case of "Clark's O. N. T.," a free trial of Old Madge's Vita was offered and sent. The free specimens, whether under the name of Clark's O. N. T. or Old Madge's Vita, consisted of a small specimen of cold cream colored pink and perfumed, and containing red pepper! The directions for the use of both of these preparations read:

"Apply the ointment with the fingers freely to the entire generative organ, including the scrotum or bag regularly every 24 hours, preferably at night before retiring, rub well into those parts, and do not hesitate to do so, as it positively does not contain any deleterious substance; it is, in fact, absolutely harmless. The parts can then be wiped with a soft cloth, though that is not necessary as the ointment is practically stainless."

During the course of the hearing, at which time Collins and Gilchrist were given the opportunity to present evidence for the claims made, a medical expert, qualified by experience and training to pass on such matters, testified on behalf of the government. This physician brought out the fact that impotence may be due to various conditions. The Solicitor's Memorandum then continued:

"It was stated in effect by the expert that, although by reason of the red pepper contained in the preparations sold by Messrs. Collins and Gilchrist such preparations would in all probability cause a flow of blood to the parts and possibly even produce a temporary erection of the penis, notwithstanding that fact, unless the posterior muscular control of the organ was such as to

prevent the escape of blood back into the general circulation, the erection would speedily subside. The expert in question stated that capsicum [red pepper] has been known for centuries to the medical profession, its therapeutic properties and limitations are well known, and it is not used by the profession for the conditions for which sold by Collins and Gilchrist. The expert stated that the preparations under consideration are utterly worthless in the treatment of impotency, prostatic ailments, bladder disorders, waning vitality, 'disintegration within,' and similar ailments. They are not a 'Fountain of Youth,' and they will not, and cannot, enable users to retain the 'fire and ambition of youth' indefinitely."

It was further brought out that the place of business of the Clark Remedy Company consisted of one room with a small side-chamber used as an office. No physicians, chemists or pharmacists were employed, but six women, who attended to the mail business, constituted the force. It was also brought out at the hearing that Nathan C. Collins had entered a plea of guilty in 1916 to a charge of using the mails to defraud and had been fined. It was shown that Collins and Gilchrist were doing an annual business of approximately $28,000, and the postmaster of Chicago reported that, on an average, 250 pieces of mail were received daily by these quacks under one or the other of the various names employed by them. The box of salve constituting "Clark's O. N. T." and "Old Madge's Vita" sold for $2; it cost approximately five cents to manufacture.

As a result of the investigation, the Solicitor for the Post Office Department recommended to the Postmaster General the issuance of a fraud order, and on May 7, 1929, the mails were closed to the Clark Remedy Company, Clark's O. N. T., Nate Clark, Madge Laboratory, Old Madge's Vita, and C. C. Nathan.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

NONSPECIFIC PROTEIN CONTRAINDICATED IN ASTHMATICS

To the Editor:—Kelly in his "Gynecology" advises the use of the greatest caution in the administration of protein therapy to hypersensitive patients who suffer from attacks of asthma on exposure to dust. A woman under my care has also a mild salpingitis for which I would like to try the use of the drug Aolan intramuscularly. Is there danger to life? Please omit name.

M.D., North Carolina.

ANSWER.—Aolan is prepared from milk freed from fat, and is claimed to be a germ free and toxin free solution of lactalbumin. It consequently contains protein foreign to the human body and its injection on that account may be fraught with the danger of violent reactions, especially in so-called hypersensitive persons. The Council on Pharmacy and Chemistry has declared Aolan inadmissible to New and Nonofficial Remedies because it is marketed on unwarranted therapeutic claims.

HISTORY OF SKELETAL TRACTION

To the Editor:—Please give me a short historical sketch of skeletal traction as to originators, dates and forms of pins or tongs used, with names of the originators. Please omit name.

M.D., Missouri.

ANSWER.—Skeletal traction is traction that is applied directly to the bone. It originated with the Codivilla-Steinmann nail-pin methods. According to Hey-Groves (On Modern methods of Treating Fractures, 1916), A. Codivilla, an Italian and F. Steinmann, a Swiss, advocated their methods independently in 1907. Roberts and Kelly (Treatise on Fractures in General Industry and Military Practice, 1921) says that Codivilla first used it in 1903. Nails were first used. Steinmann states (*Zentralbl. f. Chir.* **34**:938, 1907) that he used two nails, driving one into the bone on each side. Traction was applied by weights attached to them by rope or wire and suspended far enough away to exert a constant pull. The single nail or pin was offered as an improvement later. It permitted better traction, as it was introduced completely through the bone. Codivilla used the nail-pin method in connection with the os calcis in applying traction on the long bones of the lower extremity. Steinmann used it in applying traction to the long bones of both the upper and the lower extremities. The ice tongs caliper methods were modifications of the nail-pin methods. Ordinary ice tongs were first used and advocated by Joseph Ransohoff of Cincinnati (*Lancet Clinic* **108**:179) in the treatment of simple fracture of the femur in 1912. The points of the tongs were driven slightly into the bone. Calipers were offered as an improvement over the ice tongs by Dr. F. A. Besley of Chicago, Major, M. R. C., United States Army, during the World War (THE JOURNAL, Jan. 12, 1918, p. 87). He used calipers that penetrated the bone much like the original Codivilla-Steinmann nails. Major Pearson of the British army modified this method further by introducing calipers that only grasped the bone. Both types were used extensively during the war with marked success. Numerous other modifications (such as the stirrup attachment and horseshoe clamp) have been offered by different men, and the method and apparatus used now are largely a matter of personal choice. The caliper that does not pierce the bone is favored by many because it offers less chance for infection. One disadvantage, which may be negligible, is that it permits a less secure grip on the bone than the apparatus that enters the bony substance. Skeletal traction was the outgrowth of external traction, credit for which is given to Buck as having been originated by him in 1861. It is said, however, that weight traction was used by Hildanus in the sixteenth century.

EFFECTS OF CONTINUOUS USE OF ALLONAL AND AMYTAL

To the Editor:—What are the ill effects from continuous use of allonal or amytal, at the dose of two tablets daily? If any, what are the symptoms? Please omit my name.

M.D., Missouri.

ANSWER.—"Allonal," according to a report of the Council on Pharmacy and Chemistry (THE JOURNAL, June 12, 1926, p. 1853), is a preparation containing a combination of allylisopropylbarbituric acid and amidopyrine mixed with free allisopropylbarbituric acid and an excess of amidopyrine. "Amytal" is stated to be iso-amyl-ethyl barbituric acid. The effects from the continuous use of either of these drugs in the dose mentioned cannot be stated accurately in a few words because the barbituric acid derivatives give rise to an extraordinary variety of symptoms under different conditions. It is possible that no ill effects would follow from such daily doses in a healthy adult in whom sleeplessness resulted solely from unusual cerebral activity, if the use were not too prolonged. At the other extreme, such doses taken continuously over a long period by an invalid suffering from a serious condition in which various other drugs were taken might lead eventually to the typical symptoms of barbital poisoning, with pneumonia and death. The effects may vary to any degree between these two extremes, depending on the conditions in the individual.

"Amytal" acts qualitatively like barbital, but it is approximately three times more active. Hence, two tablets of "amytal," 1½ grains each, containing a total of 3 grains, will have the activity of approximately 9 grains of barbital; and two tablets of "allonal" contain a total of 2 grains of allyl-isopropyl barbituric acid, the action of which is qualitatively like that of barbital but which is about four and a half times as active. Hence, two tablets of "allonal" will have approximately the same action as 9 grains of barbital, together with the action of 3⅓ grains of amidopyrine. Neither Allonal nor Amytal stands accepted by the Council on Pharmacy and Chemistry.

Barbital and its derivatives are excreted rather slowly, and Steinitz (*Therap. d. Gegenw.* **49**:291, 1908), who was favorably impressed with barbital, implied that daily doses of 0.5 Gm. (7½ grains) of barbital sodium (soluble barbital-U. S. P.), the equivalent of 0.45 Gm. (7 grains) of barbital, caused cumulative effects; for, he says, cumulative toxic actions were absent even in some cases in which 0.5 Gm. of barbital sodium was taken daily for some time. It is fair to assume, therefore, that long continued daily doses of 9 grains of barbital, or of two tablets either of allonal or of amytal, will commonly lead to cumulative effects, with symptoms of poisoning of varying degrees.

Seifert (Die Nebenwirkungen der modernen Arzneimittel, ed. 2, p. 352) enumerates the following among the barbital toxic symptoms, mild, medium and severe: sleep of long duration, dizziness, fulness in the head, headache, disturbance of gait, numbness, weakness, confusion, disturbance of speech, disturbance of vision, loss of memory, excitation with tetaniform jerking, collapse, nausea, vomiting, disturbance of appetite, sweating, disturbance of heart with feeling of oppression, precordial oppression, bradycardia, albuminuria, hematuria, glycosuria, and hemorrhagic stools; the exanthems induced resemble those of measles, scarlet fever, urticaria, pemphigus, or other skin manifestations.

Others report that eruptions frequently occur even with small doses in susceptible patients, and these are often attended with high temperature. The urine may be increased, but with fall of blood pressure the urine may be diminished or completely suppressed. Many patients show a distinctly diminished intestinal peristalsis, but diarrhea is not infrequent. There is always the possibility that moderately toxic effects may be followed by pneumonia, especially when the condition of the patient predisposes him to this complication.

From the foregoing it is obvious that one cannot say precisely what will result from the daily doses mentioned, but one may expect at least minor symptoms after long continued use, especially in patients who suffer with disease attended with serious circulatory disturbance and with lessened capacity for excretion because of renal disease or other conditions.

TREATMENT OF PERSISTENT LACTATION

To the Editor:—A patient, 19 years of age, was delivered normally one and a half years ago. A small amount of milk can still be expressed from the breasts, which are flabby. Her general physical condition is good on examination, except for a slight prolapse of the uterus. The patient complains of fatigue and is unable to keep up with the work of a small family. A physician has told her that the presence of milk in the breasts is a drain on her system and accounts to some extent for her lack of energy. The condition of the uterus is being cared for, but the patient is much worried about the persistence of the milk. Can you tell me whether this condition really has any deleterious effect, its cause and treatment? Please omit name and address. M.D., New York.

ANSWER.—The persistence for a few months or more of a small amount of milk or milklike substance in the breasts of women after they wean their babies is not uncommon. It seldom produces any harm except the inconvenience of having the clothing soiled occasionally. It would require a continuous flow of milk to cause a drain on the patient's system. The cause of this condition is usually unknown; but it occasionally follows a period of nursing which lasts more than ten or twelve months. Treatment is unsatisfactory, because there is no specific drug which will produce a cessation of the flow of milk. Drugs are generally ineffectual. A snug binder aided by the temporary restriction of fluids may help, but since the breasts are flabby this is most likely unnecessary. Perhaps assurance of the patient that the condition is not pathologic may help.

TREATMENT OF TYPHOID AND DIPHTHERIA CARRIERS

To the Editor:—What is the modern method of cleaning up a carrier of typhoid and diphtheria germs? M.D., Missouri.

ANSWER.—The best method, after all, is probably time. At any rate there is no reliable method that is promptly successful in each case. Removal of the gallbladder has been practiced in the case of chronic typhoid carriers but not with uniform success, and uniform success is not to be expected in view of the underlying conditions. In diphtheria carriers, removal of the tonsils frequently gives good results in suitable cases. In diphtheria carriers, abnormal conditions in the nose and throat should be rectified as promptly as possible.

TREATMENT OF PERNICIOUS ANEMIA

To the Editor:—A woman, aged 62, with pernicious anemia, appears of a lemon yellow, is weak, and has been in failing health for six months. The red cell count is 896,000; the white cell count, 3,000; hemoglobin, by Tallqvist's scale, 40 per cent. I first saw the patient, March 2. Solution of potassium arsenite, treatment three times a day, increased by one drop daily up to 109 and then decreased at same rate, has been given. Sodium cacodylate, three-fourths grain (0.05 Gm.), is given hypodermically every other day. Dilute hydrochloric acid, 15 minims (1 cc.), is given after meals. A vial of Lilly's liver extract number 343 is taken with each meal. Red meats, liver, eggs, milk, green vegetables and carbohydrates comprise the diet. Rest in bed has been prescribed. Would blood transfusion materially prolong life or bring about a cure? Dr. Greene, in Tice's Practice, does not recommend it. Would subcutaneous injections of citrated blood of about 20 cc. two or three times a week be helpful? Please omit name. M.D., South Dakota.

ANSWER.—In the present state of our knowledge concerning the treatment of pernicious anemia the feeding of sufficient liver, in any form, raw or cooked (from ¼ to ½ pound daily), or an equivalent amount of liver extract together with a well balanced diet should bring about a remission of the anemia in practically every case unless there is some complicating infection, if the diagnosis is correct. Usually one may expect the red count to reach four million in about eight or nine weeks. Liver or liver extract must be continued permanently in order to avoid a relapse. Dilute hydrochloric acid, from 1.25 to 3 cc., may be given with meals but does not seem essential. Other measures such as iron and arsenic, blood transfusions and subcutaneous injections of citrated blood are not necessary.

The date of the blood count mentioned is not given; there is therefore no information as to whether the expected improvement in the blood picture with three vials of liver extract daily has occurred.

TREATMENT OF CHRONIC ARTHRITIS

To the Editor:—The wife of a physician is unable to get relief from a rheumatoid condition after having tried fully every kind of treatment known to her husband. The most important and troublesome condition now is arthritis in both knees. What treatment will relieve this condition? Salicylates do not agree; light, heat, immobilization, sweats or any standard formula does not assist, together with a strict diet. Will you please help me in my difficulty? M.D., California.

ANSWER.—Arthritic changes result from many causes, more frequently induced by general biologic factors, such as chemical, anaphylactic or toxic processes, than by infections of the joints themselves. It is probably true that infections, usually remote from the rheumatic joints, incite the chemical or toxic processes which cause the change in the joints, yet it is also probably true that other than infectious agents, i. e., trophic or toxic factors, may produce similar clinical disturbances.

It is evident that a successful treatment of "a rheumatoid condition" may not always result. Foci of infection should be eradicated as a matter of good health if for no other reason, but also with the hope of influencing the arthritic joints. Cinchophen or neocinchophen, 0.5 Gm. (7½ grains), three times daily after meals, much water by mouth, local heat, quartz light, a low protein and low purine diet should be tried. Finally, there is some evidence that sympathectomy will benefit true arthritis deformans, if such it be, but such treatment should hardly be considered out of the experimental stage as yet.

BILE DRAINAGE AFTER CHOLECYSTECTOMY

To the Editor:—Will you please advise the source of the bile drainage after a cholecystectomy. We have had quite a discussion among our staff as to whether the bile comes from the stump of the cystic duct or the denuded area resulting from the removal of the gallbladder. Kindly omit name. M.D., Georgia.

ANSWER.—The source of the bile drainage after a cholecystectomy is mostly from the cystic duct. The catgut with which it is ligated loosens within from twenty-four to forty-eight hours because of the fluid absorption. The cystic duct, being lined with a mucous membrane, is not sealed off; hence, leakage of bile. It is possible that drainage may be due to adventitious ducts in the bed of the liver or occasionally to wounds of the common duct, but both of these sources are rare and the leakage from the cystic duct is the most frequent one to be suspected.

POSSIBILITY OF EMBOLISM AFTER INJECTION TREATMENT OF VARICOSE VEINS

To the Editor:—Concerning the use of sodium salicylate, mercuric chloride, and the like, in the treatment of varicose veins, about a year ago I wrote to you asking whether you had any unfavorable reports on the use of this method, on account of developing embolism. Your reply indicated that there was no unfavorable information. I received the same type of reply from the American College of Surgeons. A short time later I read in THE JOURNAL a record of eight or ten deaths in the use of this method, but have seen nothing since. Its use seems to be becoming rather general. Frankly, I have always been afraid of it and am wondering whether you have any additional information since the article that appeared in THE JOURNAL. C. L. BEST, M.D., Freeport, Ill.

ANSWER.—The danger of embolism following the injection treatment of varicose veins must be admitted, as deaths have been reported. A careful analysis of these fatalities probably excludes a few of the deaths that our correspondent refers to (de Takáts, Géza: Varicose Veins and Their Sequelae, THE JOURNAL, March 9, p. 775).

It is evident that the radical excision of varicose veins carries a far higher percentage of embolism than does the injection treatment. Furthermore, if one were to condemn a method of treatment because of the possibility of embolism, hernias could not be repaired and fractures of the thigh could not be immobilized.

There is one more point, which can be settled only on a statistical basis. Do varicose veins, untreated, but naturally subject to thromboses following trauma or infection, cause the patient's death by embolism? A large postmortem material from Vienna would indicate that this evidence is possible and has been observed.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALABAMA: Montgomery, July 9-12, 1929. Chairman, Dr. J. N. Baker, 519 Dexter Avenue, Montgomery, Ala.

AMERICAN BOARD OF OPHTHALMIC EXAMINERS: Portland, Ore., July 8, and Philadelphia, Oct. 21. Sec., Dr. William H. Wilder, 122 South Michigan Avenue, Chicago.

ARIZONA: Phoenix, July 2, 1929. Sec., Dr. H. P. Mills, 320 Goodrich Building, Phoenix, Ariz.

CALIFORNIA—Reciprocity: San Francisco and Los Angeles, June 12. Sec., Dr. Charles B. Pinkham, 420 State Office Bldg., Sacramento, Calif.

CALIFORNIA: Los Angeles, July 8-11, 1929. Sec., Dr. Charles B. Pinkham, 420 State Office Building, Sacramento, Calif.

CONNECTICUT—Basic Science: New Haven, June 8. Address State Board of Healing Arts, 1895 Yale Station, New Haven, Conn.

DELAWARE—Regular and Homeopathic: Wilmington, June 10-12. Sec., Dr. Harold B. Springer, 1013 Washington Street, Wilmington, Del.

FLORIDA: Jacksonville, June 17-18, 1929. Sec., Dr. William M. Rowlett, 812 Citizens Bank Building, Jacksonville, Fla.

GEORGIA: Atlanta and Augusta, June 5-7. Sec., Dr. B. T. Wise, Americus, Ga.

HAWAII: Honolulu, July 8, 1929. Sec., Dr. James A. Morgan, Room 48, Young Building, Honolulu, Hawaii.

ILLINOIS: Chicago, June 25-28. Supt. of Registration, Mr. V. C. Michels, Springfield, Ill.

INDIANA: Indianapolis, June 25-27. Sec., Dr. E. M. Shanklin, 421 State House, Indianapolis, Ind.

IOWA: Iowa City, June 4-6. Director of Examinations, Mr. H. W. Grefe, Iowa Department of Health, Des Moines, Iowa.

KANSAS: Kansas City, June 18, 1929. Sec., Dr. Albert S. Ross, Sabetha, Kan.

KENTUCKY: Louisville, June 11-13. Sec., Dr. A. T. McCormack, 532 W. Main Street, Louisville, Ky.

LOUISIANA: New Orleans, June 13-15. Sec., Dr. Roy B. Harrison, 1507 Hibernia Bank Building, New Orleans, La.

MARYLAND: Baltimore, June 18-21. Sec., Dr. Henry M. Fitzhugh, 1211 Cathedral Street, Baltimore, Md.

MARYLAND—Homeopathic: Baltimore, June 11. Sec., Dr. J. S. Garrison, 517 Old Orchard Road, Ten Hills, Baltimore, Md.

MICHIGAN: Ann Arbor, June 11-13. Detroit, June 19-21. Sec., Dr. Guy L. Connor, 707-708 Stroh Building, Detroit, Mich.

MISSOURI: St. Louis, June 12-14. Sec., Dr. James Stewart, Capitol Building, Jefferson City, Mo.

NEBRASKA: Omaha, June 10-12. Chief, Mrs. Clark Perkins, Bureau of Examining Boards, Lincoln, Neb.

NEW JERSEY: Trenton, June 18-19. Sec., Dr. Charles B. Kelley, 1101 Trenton Trust Building, Trenton, N. J.

NEW YORK: New York, Albany, Syracuse and Buffalo, June 24-27. Chief, Mr. Herbert J. Hamilton, Educational Building, Albany, N. Y.

NORTH CAROLINA: Raleigh, June 24. Sec., Dr. John W. MacConnell, Davidson, N. C.

NORTH DAKOTA: Grand Forks, July 2-5, 1929. Sec., Dr. G. M. Williamson, Grand Forks, N. D.

OHIO: Columbus, June 3-6. Sec., Dr. H. M. Platter, 85 East Gay Street, Columbus, Ohio.

OREGON: Portland, July 1-3, 1929. Sec., Dr. Joseph F. Wood, Suite 510-512 Selling Building, Portland, Ore.

OTOLARYNGOLOGY: Portland, Ore., July 8, 1929. Sec., Dr. W. P. Wherry, 1500 Medical Arts Building, Omaha, Neb.

PENNSYLVANIA: Philadelphia and Pittsburgh, July 9-13, 1929. Dir., Mr. C. D. Koch, Harrisburg, Pa.

SOUTH CAROLINA: Columbia, June 25. Sec., Dr. A. Earle Boozer, 505 Saluda Ave., Columbia, S. C.

TENNESSEE: Memphis, Nashville and Knoxville, June 14-15. Sec., Dr. Alfred B. DeLoach, Medical Arts Building, Memphis, Tenn.

TEXAS: Austin, June 18-20. Sec., Dr. T. J. Crowe, 918-919 Mercantile Bank Building, Dallas, Texas.

VERMONT: Burlington, June 19-21. Sec., Dr. W. Scott Nay, Underhill, Vt.

VIRGINIA: Richmond, June 18-21. Sec., Dr. J. W. Preston, 720 Shenandoah Life Building, Roanoke, Va.

WASHINGTON-BASIC SCIENCE: Seattle, July 11-12, 1929. Dir., Mr. Charles Maybury, Olympia, Wash.

WISCONSIN—Basic Science: Milwaukee, June 24. Sec., Prof. Robert N. Bauer, 3410 Wisconsin Ave., Milwaukee, Wis.

WISCONSIN: Madison, June 25-27. Sec., Dr. Robert E. Flynn, 315 State Bank Building, LaCrosse, Wis.

Washington January Examination

Mr. George L. Berger, assistant director of the Washington State Department of Licenses, reports the written examination held at Seattle, Jan. 14-15, 1929. The examination covered 8 subjects and included 80 questions. An average of 75 per cent was required to pass. Of the 12 candidates examined, 11 passed and one failed. Twenty physicians were licensed through reciprocity with other states. The following colleges were represented:

College	Year Grad.	Per Cent
PASSED		
George Washington Univ. Medical School	(1928)	84.6
Northwestern University Medical School	(1928)	77.3,* 77.3*
Univ. of Illinois College of Medicine	(1928)	82.5*
Washington Univ. School of Medicine	(1928)	83.3
Creighton Univ. School of Medicine	(1928)	75.3
University of Oregon Medical School	(1927) 88.7, (1928)	80.0, 80.4
Univ. of Virginia Department of Medicine	(1928)	77.4, 82.6
FAILED		
Columbia Univ. Coll. of Physicians and Surgeons	(1925)	71.6

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Rush Medical College	(1910) (1924) (1926) Illinois;	(1924)	Minnesota
Northwestern Univ. Medical School		(1915) (1928)	Illinois
State Univ. of Iowa College of Medicine		(1927) (1928)	Iowa
Univ. of Louisville School of Medicine		(1926)	Kentucky
Tulane Univ. of Louisiana School of Medicine		(1924)	Louisiana
Univ. of Michigan Medical School		(1928)	Michigan
Univ. of Minnesota Medical School		(1928)†	Minnesota
St. Louis Univ. School of Medicine		(1927)	Missouri
Univ. of Nebraska College of Medicine		(1928)	Nebraska
Creighton Univ. School of Medicine		(1910)	Nebraska
Ohio State Univ. College of Medicine		(1928)	Ohio
Univ. of Oregon Med. School	(1927) Calif.;	(1927) (1928)	Oregon
Univ. of Virginia Department of Medicine		(1928)	Virginia

* These candidates received their four year certificates and will receive their M.D. degrees on completion of one year's internship in a hospital.

† This candidate has received his M.B. degree and will receive his M.D. degree on completion of one year's internship in a hospital.

SCHOOLS OFFERING SUMMER COURSES IN 1929

Prepared by the Council on Medical Education and Hospitals

CALIFORNIA

STANFORD UNIVERSITY SCHOOL OF MEDICINE, 2398 Sacramento Street, San Francisco.—Offers special opportunities for study and research to qualified graduates in medicine and to medical students, to consist of (1) a two weeks' course of lectures primarily intended for graduates, and (2) work in the clinics, wards and laboratories, for graduates and undergraduates. The two weeks' course will probably be given from June 17 to June 29. Four sessions will be held daily, covering the subjects of general medicine, general surgery, obstetrics and gynecology, pediatrics, preventive medicine, pathology and pharmacology. Work offered to graduates and undergraduates as special workers in the various departments includes pharmacology, pathology, general medicine, diabetes, electrocardiography and basal metabolism, diseases of chest, pediatrics, neuropsychiatry, skin and syphilis, metabolism laboratory, radiology, physical therapy technic, general surgery, fracture clinic, orthopedic surgery, genito-urinary surgery, ophthalmology, otolaryngology, surgical pathology, surgical anatomy, obstetrics and gynecology, gynecologic laboratory, obstetrics and female urology. The minimum period of attendance is four weeks. Dr. William Ophuls, dean.

UNIVERSITY OF CALIFORNIA MEDICAL SCHOOL, Parnassus and Third Avenues, San Francisco.—Courses for qualified graduates in medicine will be given in general medicine, surgery, pediatrics, circulatory diseases, gastro-intestinal diseases, x-ray, orthopedics, urology, eye, nose and throat, neuropsychiatry, pathology and laboratory diagnosis. In addition to these regular courses, there will be daily midday clinics, and on several evenings a week, lectures on general medical topics, open to the medical public. Term extends from June 3 to June 29. Dr. Langley Porter, dean.

COLORADO

UNIVERSITY OF COLORADO SCHOOL OF MEDICINE, 4200 East Ninth Avenue, Denver.—Offers the following courses to medical students and to graduates in medicine: gross anatomy, microscopic anatomy, neuro-anatomy, research in anatomy; anaerobic bacteriology, research problems in bacteriology and public health; chemistry of blood, biochemical preparations, research in biochemistry, basal metabolism; clinical laboratory methods, technic of the Wassermann test, clinical pathology for medical students; general and special pathology, autopsies, research in pathology; advanced physiology of the glands of internal secretion, special problems in pharmacology, special problems in physiology. During July an intensive course in clinical psychiatry, the psychopathology of childhood and mental hygiene will be conducted by the staff of the Psychopathic Hospital and the heads of other departments. This course is open to graduates in medicine and will consist of lectures and of clinical, ward and outpatient work. Term extends from June 17 to August 23. Dr. Maurice H. Rees, dean.

CONNECTICUT

NEW HAVEN SCHOOL OF PHYSIOTHERAPY, 303 Whitney Avenue, New Haven.—Courses are offered to graduates of class A medical schools who have completed a full hospital intern year or five years of practice. Physicians may register throughout the year. For the summer period, classes will convene about the first of each month except July. For further information address Dr. Harry Eaton Stewart, director.

DISTRICT OF COLUMBIA

HOWARD UNIVERSITY SCHOOL OF MEDICINE, Corner of Fifth and W streets, N. W., Washington.—Courses offered to graduates of recognized medical colleges in general surgery, internal medicine, roentgenology, otolaryngology, ophthalmology, gynecology, genito-urinary surgery, laboratory methods and physical diagnosis. Term extends from June 10 to July 20. Dr. Edward A. Balloch, dean.

ILLINOIS

CHILDREN'S MEMORIAL HOSPITAL (in affiliation with the University of Chicago), 735 Fullerton Avenue, Chicago.—Offers courses in pediatrics to graduates in medicine. During 1929, courses will be given in June, August and October. The work is arranged so that four weeks represents a rounded course. All inquiries should be addressed to the Graduate School of Pediatrics, care of the Children's Memorial Hospital.

LOYOLA UNIVERSITY SCHOOL OF MEDICINE, 706 South Lincoln Street, Chicago.—The department of anatomy will offer the following courses to acceptable students (those who have been regularly matriculated and who are in good standing in a class A medical school): upper and lower extremity, histology and organology, and applied anatomy. Term extends from June 17 to August 10. Thesle T. Job, professor of anatomy.

NORTHWESTERN UNIVERSITY MEDICAL SCHOOL, 303 East Chicago Avenue, Chicago.—Will offer a full quarter of both junior and senior courses. Dr. Irving S. Cutter, dean.

RUSH MEDICAL COLLEGE (under the auspices of the University of Chicago), 1758 West Harrison Street, Chicago.—Offers courses in the following departments to third and fourth year medical students: pathology, medicine, pediatrics, surgery, obstetrics and gynecology, laryngology and otology, ophthalmology and dermatology. There will be opportunity for a limited number of qualified special students to take work in these departments. Postgraduate courses in otolaryngology, ophthalmology, dermatology and radiology for a limited number of qualified students who are able to spend one or more years in study are continued during the summer quarter. Courses for shorter periods may be arranged in radiology. Dr. Ernest E. Irons, dean.

UNIVERSITY OF CHICAGO SCHOOL OF MEDICINE (Graduate School of Medicine of the Ogden Graduate School of Science), Fifty-Eighth Street and Ellis Avenue, Chicago.—Courses in the following departments are offered to qualified medical students: anatomy, physiology, physiological chemistry and pharmacology, pathology, hygiene and bacteriology, medicine and surgery. The summer quarter is divided into two terms, the first extending from June 17 to July 24, and the second from July 25 to August 30. Dr. B. C. H. Harvey, dean.

INDIANA

INDIANA UNIVERSITY SCHOOL OF MEDICINE, Indianapolis.—A course in biochemistry, equivalent to the regular sophomore course, is offered to undergraduates. Beginning June 13, and extending for six weeks, the following courses will be offered to the physicians of Indiana: current problems in biochemistry, pharmacology, medical ward visits, physical diagnosis, physical therapy, general pathology, disease production and resistance, and nutrition. Clinics will be held in dermatology; genito-urinary; ophthalmology; rhinology, otology and laryngology, and surgery. Ample clinical material in both hospital and dispensary patients is available for these clinics. For further information address the registrar.

IOWA

STATE UNIVERSITY OF IOWA COLLEGE OF MEDICINE, Iowa City.—Undergraduate courses in the following subjects are offered to qualified students: surgical and applied anatomy, general anatomy, embryology and histology, neuro-anatomy, general and medical bacteriology, advanced bacteriology, physiology, physiologic psychology, hygiene and public health, advanced biochemistry, and pathologic chemistry. The summer session is divided into two terms, the first extending from June 10 to July 19, and the second from July 22 to August 23. For further information address the Summer Session Office, or Dr. Henry S. Houghton, dean.

KANSAS

UNIVERSITY OF KANSAS SCHOOL OF MEDICINE, Lawrence.—Courses in the following departments will be given to qualified undergraduates and graduates in medicine: anatomy, including upper and lower extremity, abdomen and thorax, head and neck, embryology, histology, splanchnology and neurology; bacteriology, including pathogenic bacteriology, immunity, bacteriologic journals, special problems in bacteriology, research (thesis) in bacteriology, and research; biochemistry, biologic and advanced; human physiology, special problems in physiology, physiology of muscle, nerve, central nervous system and special senses, research, and advanced hygiene. The summer session is divided into two terms. All courses will be given at the Lawrence division. Dr. Harry R. Wahl, dean.

LOUISIANA

TULANE UNIVERSITY OF LOUISIANA, 1551 Canal Street, New Orleans.—The following courses, carrying undergraduate credit, are offered: anatomy, including human dissection, embryology, histology and neuro-anatomy; biochemistry; special pathology; physiology; medicine (senior course), and physical diagnosis. All courses begin June 17 and continue for a period of six weeks, ending July 26, except in the departments of physiology and medicine, in which courses extend eight or nine weeks. Dr. C. C. Bass, dean.

MARYLAND

UNIVERSITY OF MARYLAND SCHOOL OF MEDICINE, Lombard and Greene streets, Baltimore.—Offers a three weeks' general intensive course for physicians during the month of June. Registration is limited and preference will be given to physicians registered in Maryland. The course consists of lectures dealing with modern advances in diagnosis and treatment, stressing the field of general medicine; but surgery and the various specialties will also be included. The schedule covers ward rounds; daily clinics conducted by different departments; assignment at dispensary clinics for pediatrics, genito-urinary diseases, syphilis, and gastro-intestinal diseases; laboratory methods of diagnosis, therapeutic procedures; roentgen diagnosis, and electrocardiography. For further information address Dr. J. M. H. Rowland, dean.

MASSACHUSETTS

HARVARD UNIVERSITY MEDICAL SCHOOL, 240 Longwood Avenue, Boston.—Courses for graduates are offered as follows:* physical therapy, June 19 to August 2; topographic anatomy, June 3 to June 20 (women not admitted); microscopic anatomy, June 24 to August 3; microscopic technic, June; advanced histology and research by special arrangement with the instructor; physiology, July 5 to August 16 (course 1, physiology of the muscle and nervous tissues, central nervous system and sense organs; course 2, physiology of the circulation, respiration, digestion, excretion, metabolism and animal heat); biologic chemistry (students may begin this course June 1 to June 22, and continue for six weeks); research and advanced individual work in biologic chemistry by arrangement; bacteriology, work in the laboratories open to properly qualified graduate students by arrangement; general and special pathology, July 17 to August 28; pathologic anatomy and autopsy technic, July and repeated in August (women not admitted); pediatrics, one month course during June, designed for practitioners; preventive medicine and hygiene, advanced laboratory or field work for any length of time by arrangement. For further information address Dr. Frank R. Ober, assistant dean.

MASSACHUSETTS INSTITUTE OF TECHNOLOGY, Cambridge.—The third Public Health institute will be conducted from June 24 to July 13. The course outlined is primarily intended for health officers and other public health workers. From July 1 to July 23, additional courses in bacteriology, health education methods, hygiene of the school child, and public health laboratory methods are offered. For further information address Prof. S. C. Prescott, Department of Biology and Public Health.

MICHIGAN

UNIVERSITY OF MICHIGAN MEDICAL SCHOOL, Ann Arbor.—The courses offered during the summer session will include (1) all of the laboratory and some of the lecture courses of the first and the second year; (2) some of the demonstration courses of the third year; (3) certain of the clinical courses of the senior year; (4) elective courses advantageous to medical students, technicians and others. These courses cover work in anatomy; bacteriology; dermatology and syphilology; internal medicine; neurology; obstetrics and gynecology; ophthalmology; otolaryngology; pathology; pediatrics; pharmacology, materia medica and therapeutics; physiologic chemistry; physiology; roentgenology; surgery. The summer term begins June 24 and closes August 2, with the exception of some of the laboratory courses, which will extend to August 16. Dr. Hugh Cabot, dean.

MINNESOTA

UNIVERSITY OF MINNESOTA MEDICAL SCHOOL, Minneapolis.—This school has the four quarter system, and therefore the usual course is offered during the summer to both graduate and undergraduate students. The summer quarter is divided into two terms, the first extending from June 18 to July 27, and the second from July 29 to August 31. Dr. E. P. Lyon, dean.

MISSOURI

ST. LOUIS UNIVERSITY SCHOOL OF MEDICINE, 1402 South Grand Avenue, St. Louis.—Offers undergraduate instruction in the following departments: anatomy, including human dissection, human histology, embryology and neuro-anatomy; bacteriology, serology and immunology; biochemistry; physiology. Term extends from June 5 to July 31. For further information address Dr. Daniel M. Schoemaker, director of the summer session, School of Medicine.

NEBRASKA

UNIVERSITY OF NEBRASKA COLLEGE OF MEDICINE, Forty-Second Street and Dewey Avenue, Omaha.—The following courses will be offered, provided the number of registrants is sufficient: embryology, organology, physiology and pharmacology, and clinical pathology. Dr. J. Jay Keegan, dean.

NEW JERSEY

THE PHYSIATRIC INSTITUTE, Morristown.—Offers one month of full-time work to graduate physicians in the practical management of diabetes, obesity, hypertension, nephritis and other metabolic disorders, comprising lectures, demonstrations and practical work in the laboratories and wards of the institute. The tuition is $150. The summer course begins August 1 and closes September 1. Dr. Frederick M. Allen, director.

NEW YORK

COLUMBIA UNIVERSITY COLLEGE OF PHYSICIANS AND SURGEONS, 630 West One Hundred and Sixty-Eighth Street, New York.—Offers courses to qualified graduates and undergraduates as follows: histology; general bacteriology; cancer research; neuro-anatomy; clinical pathology; general, elementary, laboratory and advanced mammalian physiology. The term extends from July 8 to August 16. Dr. William Darrach, dean.

NEW YORK POST-GRADUATE MEDICAL SCHOOL AND HOSPITAL, 301 East Twentieth Street, New York.—With the exception of the cadaver courses, the same courses that are offered during the year will be given during the summer session. These courses are open to qualified graduates in medicine. For further information address the office of the dean.

TRUDEAU SCHOOL OF TUBERCULOSIS, Saranac Lake.—A six weeks' course providing for the intensive study of tuberculosis is offered to graduates in medicine from May 13 to June 22. For further information address the secretary.

OHIO

UNIVERSITY OF CINCINNATI COLLEGE OF MEDICINE, Eden and Bethesda Avenues, Cincinnati.—Offers a course in preventive medicine, comprising lectures and laboratory, beginning June 25 and ending August 1. Registration for the course must be made by June 1. For further information address Dr. Arthur C. Bachmeyer, dean.

* Based upon information to date; incomplete.

SOUTH CAROLINA

MEDICAL COLLEGE OF THE STATE OF SOUTH CAROLINA, 16 Lucas Street, Charleston.—An intensive clinical course for physicians will be conducted from May 28 to June 9. Internal medicine, pediatrics, surgical diagnosis and obstetrics will be stressed, and intensive courses will be offered to special classes in anatomy, animal surgery and cardiology. Arrangements can be made for special work in laboratories and for roentgen-ray interpretation. There will be no charge for the course. Dr. Robert Wilson, dean.

TEXAS

BAYLOR UNIVERSITY COLLEGE OF MEDICINE, 810 College Avenue, Dallas.—Provided there are a sufficient number of acceptable applicants, courses in histology, biochemistry, bacteriology, clinical pathology and neuro-anatomy will be offered during the term extending from June 10 to August 1; and review courses in gross anatomy and pathology will be given beginning June 3 and ending August 1. In addition, a series of clinics for practitioners will be held from May 27 to June 8. Dr. W. H. Moursund, dean.

UNIVERSITY OF TEXAS SCHOOL OF MEDICINE, 912 Avenue B, Galveston.—A course of lectures and clinics for practitioners will be held from June 3 to June 15, inclusive. Dr. George E. Bethel, dean.

VIRGINIA

UNIVERSITY OF VIRGINIA DEPARTMENT OF MEDICINE, University.—The following courses are offered to qualified students: anatomy, topographic anatomy, anatomy of the human nervous system, histology, embryology, biochemistry, pharmacology and bacteriology. The term extends from June 17 to July 27. Dr. James C. Flippin, dean.

WISCONSIN

UNIVERSITY OF WISCONSIN SCHOOL OF MEDICINE, Madison.—Courses are offered to undergraduate students in the following departments: anatomy, including histology and organology, embryology, human, topographic, neural and advanced anatomy; bacteriology; public health; medicine (open to Wisconsin students only); pharmacology; physiologic chemistry; physiology; surgery (open to Wisconsin students only). Session begins July 1 and closes August 9. Dr. Charles R. Bardeen, dean.

Book Notices

COMPARATIVE NEUROLOGY. A Manual and Text for the Study of the Nervous System of Vertebrates. By James W. Papez, B.A., M.D., Cornell University. Cloth. Price, $6. Pp. 518, with 315 illustrations. New York: Thomas Y. Crowell Company, 1929.

The preparation of an introductory textbook of comparative neurology presents special difficulties. That perhaps is why so few people have tried it. Every experienced teacher will agree that personal study of the material in the laboratory by every student is essential. Dr. Papez, accordingly, describes his book as "an introductory course on the form, function and structural interpretation of the nervous system," and instructions for the preparation of illustrative material are given throughout the book. The three parts of the work comprise (1) the gross structure of the brain of mammals, (2) microscopic structure of the mammalian nervous system, and (3) brains of lower vertebrates. The first part includes surface views and descriptions of a wide range of types, with some dissections showing internal structure. The beginner plunges at once into a technical description of gyri and sulci with little to guide him in orientation or interpretation. He will find it hard reading, for the only possible basis for interpretation is the account of microscopic structure which begins 150 pages farther on. To the more advanced student this part will be useful. The striking feature of the second part is a series of original drawings of transverse sections through the brain stem of the cat which, with the accompanying description, give a complete account. The treatment of the comparative anatomy and physiology of the cerebral cortex is rather meager, the chapter on functions being largely devoted to maps of localization in the human cortex which will be criticized by many clinicians as more dogmatic than present evidence justifies. The third part gives in 110 pages a judicious selection of the more prominent features of representative vertebrates below mammals, with good series of cross-sections through brains of snake, robin and salamander. Misprints are rather too numerous throughout the work. When it comes to nomenclature in comparative neurology, the critic should not be captious, for there are no authoritative standards. The author has wisely chosen to use BNA terms, in general, so far as applicable. But there are some curious aberrations. For instance, one might suppose that the word cerebrum, in the course of its long history, had received about all possible definitions, so it is with some surprise that it is found here applied to the neopallium. There are numerous useful summaries and diagrams of conduction paths. The detailed descriptions are, however, rather disconnected and the novice will have difficulty in extracting from them connected ideas of the more important things. In short, the book does not seem well adapted to introduce the beginner to the subject, but it is a valuable work of reference for such students and for all who use the laboratory animals for physiologic experiments. The account of the apparatus of vestibular and cerebellar reflexes should be particularly mentioned, for here the author speaks from extensive personal experience.

TOXIKOLOGIE. Ein Lehrbuch für Ärzte, Medizinalbeamte und Medizinstudierende. Von Dr. E. Starkenstein, a. o. Professor der Pharmakologie und Pharmakognosie an der Deutschen Universität in Prag, Dr. E. Rost, Geh. Regierungsrat, und a. o. Prof. der Pharmakologie an der Universität in Berlin, und Dr. J. Pohl, Geh. Medizinalrat der Universität Breslau. Paper. Price, 24 marks. Pp. 431, with 60 illustrations. Berlin: Urban & Schwarzenberg, 1929.

This work is written from the point of view that toxicology is, in reality, simply applied or practical experimental pharmacology, in the sense that the study of the toxicologic action of drugs may be controlled by clinical experience and the results of experimental investigation. As is to be expected, therefore, the discussions cover the methods of action of the poisons to a greater extent than is usual in works on toxicology. The book is divided into two parts: general toxicology, in which the general principles of toxicology are clearly, concisely and accurately presented, and special toxicology, in which the specific groups of poisons are discussed in detail. In the presentation of the subject matter, the pharmacologic action of the poisons and the symptomatology and treatment of the various poisonings are adequately presented, while little space is devoted in the text to the pathologic changes, and in only a few instances is there any attempt to discuss the chemical and biologic detection of the poisons. The style is clear and concise. The illustrations are good, the colored plates being especially instructive and valuable. Of special importance to the student and practitioner, as well as to the toxicologist, are the two indexes, the index of symptoms and the index of pathologic-anatomic observations, which correlate the special conditions observed with the special poisons which produce these conditions. This work should have a place in the library of all who are interested in toxicology.

GETTING READY TO BE A MOTHER. A Little Book of Information and Advice for the Young Woman Who Is Looking Forward to Motherhood. By Carolyn Conant Van Blarcom, R.N. With an introduction by J. Clifton Edgar, M.D., Consulting Obstetrician to Bellevue Hospital. Cloth. Price, $1.75. Pp. 286, with 82 illustrations. New York: Macmillan Company, 1929.

This book, written by a nurse who has had much experience in the care of obstetric patients, is a useful guide for the expectant mother. It is divided into two parts, the first of which is devoted to the mother and the second to the baby. The style of writing is simple and interesting and the information given is accurate. The reasons for prenatal care are made clear and many false notions concerning pregnancy are dispelled effectively. The printing is clear and the illustrations are instructive. The book should become popular with prospective mothers.

L'INDIVIDUALITÉ DU SANG EN BIOLOGIE, EN CLINIQUE ET EN MÉDECINE LÉGALE. Par Leone Lattes, professeur à la Faculté de médecine de Modène. Préface du professeur E. Jeanbrau. Paper. Price, 50 francs. Pp. 314, with 66 illustrations. Paris: Masson & Cie, 1929.

This treatise first appeared in Italian in 1923; it was translated into German two years later, and this edition in French is a revision amplified from the rapid developments that have taken place recently. The bibliography of what is commonly referred to by physicians as blood grouping has more than doubled in the last three years. The references at the end of this volume cover fifty-four pages and number more than 1,300. There is also a separate author index. Lattes is a well known authority in this special field of hematology. His articles have appeared in Italian, French, German and American journals since 1913. He also wrote Methoden zur Feststellung der Individualität des Blutes, for the Abderhalden handbook. The work under review is consequently a worthy companion piece for Konstitutionserologie und Blutgruppenforschung, by L. Hirszfeld, which appeared last year. Following an intro-

duction, the chapters are on normal reactions, heredity and individuality, ethno-anthropologic individuality, clinical applications in blood transfusion and legal medicine, and laboratory methods. The necessity of typing blood before transfusion has been realized for several years. In the Ukraine, Bavaria and Wurttemberg, blood of bodies examined for legal investigations is regularly typed in order that comparison may be made subsequently with blood stains on clothing, other materials, and objects at the site where criminal assaults have led to bleeding. Legal problems of parentage, usually paternity, have also received valuable assistance from this relatively new science. Another unforeseen marvelous consequence of untrammeled scientific research has been the application of this phase of serology to solving difficult problems of the origin of different human races. An interesting chapter is devoted to this subject. The absence of an involved technical nomenclature is particularly gratifying. In future revisions, a chapter should be added on the pathology of blood incompatibility.

A SHORTER ANATOMY, WITH PRACTICAL APPLICATIONS. By E. Wolff, M.B., B.S., F.R.C.S., Demonstrator of Anatomy, University College. Cloth. Price, $6. Pp. 451, with 130 illustrations. New York: William Wood & Company, 1929.

This book exemplifies a method of study of anatomy which seems to have been especially developed in some English schools. The objective is the examination, and the emphasis is on drills, quizzes, and repetitions of verbal descriptions. It is a method of learning by rote from brief descriptions and tabulations. The drawings are sketchy and diagrammatic. Among these are included ten roentgenograms showing the gallbladder and various stages of the growth of bones. These photographs, made by F. Melville, are the best things in the book. The author says in the preface that he has attempted to give an account of the surface form of muscles and of the changes they undergo when in action, and that he has attempted to contribute methods of "showing them up." The perusal of the account of the important muscles of the abdomen and pelvis shows clearly that so fas as these are concerned the attempt has been unsuccessful. An English surgeon once remarked that in preparation for surgery a man must be content to spend years in the "drudgery of anatomy." This book explains his attitude.

EXAMEN DU SANG: PHYSIOLOGIE, TECHNIQUE ET SÉMÉIOLOGIE. Par Dr. D. Warsamy, Bactériologiste des Hôpitaux de Baloukli (Constantinople). Paper. Pp. 472, with illustrations. Paris: E. Le François, 1928.

This laboratory manual of methods for determining the physical, morphologic, chemical and biologic characteristics of human blood in health and in disease, together with its bacterial and other parasites, is practical and thorough with many illustrations of apparatus and instruments. It is entitled to much better paper and workmanship than have been employed in its publication.

DISEASES OF THE BLOOD. By A. Piney, M.D., M.R.C.P., Research Pathologist, Cancer Hospital, London. Cloth. Price, $4. Pp. 195, with 16 illustrations. Philadelphia: P. Blakiston's Son & Company, 1928.

Heavy paper, good-sized type, fine workmanship, an excellent glossary, and most of the illustrations on plates, with some in colors, characterize this small volume. Experience and knowledge of the literature of hematology are evident from the brief convincing descriptions in choice English. The Greek suffix "osis" unfortunately has a double significance. It often means causation, as in actinomycosis; and often simply excess, as in adiposis. The storm of disapproval with which introduction of the term "nephrosis" was received is easily recalled. Erythrosis, myelosis and leukosis, implying hyperplasia of tissues where different blood cells are produced, may not meet with favor. Changes of the blood are set forth, but with fully as much attention to those concomitant in the hemoblastic tissues. Some of the other diseases of these parts, such as lymphosarcoma and Hodgkin's disease, in which the blood may be quite normal, are also portrayed. They are approached from the clinical aspect rather than the usual one of morbid anatomy and etiology. There is more to commend in the author's statement that it is "a matter of opinion" whether chronic leukemia should be regarded as neoplastic, than in his suggestion that metastatic carcinoma in bones be regarded as a form of secondary myeloma. That considerable infestation with the broad tapeworm exists here and in Canada about the Great Lakes should probably now have some notice. Of the final chapters in small print which deal with the use of x-rays and radioactive substances, blood grouping, blood transfusion and methods of examining the blood, the last is particularly valuable. The work is a manual adapted to the routine work of students, interns and laboratory workers. It will also be welcomed by physicians who desire a short summary of diseases of the blood and blood-forming organs.

ANATOMY AND THE PROBLEM OF BEHAVIOUR. By G. E. Coghill. Lectures Delivered at University College, London. Cloth. Price, $3. Pp. 113, with 52 illustrations. New York: Macmillan Company, 1929.

This little book presents some of the general conclusions derived from more than thirty years of observation and experiment devoted to the correlation in detail of the development of behavior patterns with the growth of the bodily organs concerned. Most of this work has been done on the salamander *Amblystoma*, and it is safe to say that more exact knowledge of the development of this generalized vertebrate, of the successive steps in the growth of its behavior, and of the anatomic changes that go with each advance in physiologic capacity has been obtained than has been recorded for any other animal, not excepting man.

The first lecture outlines the development of behavior and its anatomic explanation from the first reaction to stimulation through swimming, feeding and walking stages. The changes in the neuromuscular mechanisms at each stage in the physiologic development are described in detail.

The second lecture deals with the origin of the nervous mechanism from structures and functions that antedate nervous conduction. Here free use is made of the experimental studies of C. M. Child on physiologic gradients and mechanism of dominance and subordination of parts. Coghill's own experiments by Child's method reveal in preneural stages two major physiologic gradients, one in the ectoderm and nervous system indicating higher physiologic activity in the head diminishing tailward, and one chiefly in the mesoderm with a relatively high rate at the tail end diminishing headward. Within these primary gradients of physiologic activity the neuroblasts mature into functional neurons, and the course of this differentiation, including the direction of the growth of nerve fibers and the location of synaptic junctions, seems to be controlled by the dynamics of the gradients. Thus the gap between the general physiology of early stages and the special physiology of the differentiated nervous organs is bridged, and "the mechanism that determines the primary behavior pattern is organized under the dominance of preneural metabolic gradients."

The third lecture provides the interpretation and application of these observations and is of more general interest. Learning new ways of behaving is a bodily growth. This is proved by direct observation in early stages of development, and the newly acquired organs can be accurately described. The growth of the neuron and the development of behavior in their actual relation to each other under specific conditions are here for the first time clearly revealed. "The conception that a neuron grows during a certain so-called embryonic period, or period of maturation, and then ceases to grow and becomes simply a conductor in a fixed mechanism is erroneous, and wholly inadequate to account for the function of the nervous system as a mechanism of learning."

Psychologic applications are made, especially in the direction of pointing out intelligible mechanisms for the doctrine of configuration or quality on a ground as elaborated by the Gestalt school. The genesis of the apparatus of conditioning the form of behavior is clearly indicated, though it should be borne in mind that the author uses conditioning in a broader sense than Pavlov's. Conditioning also is growth; it is change in the anatomic structure under the influence of experiences had. "Growth, accordingly, may be conceived as the creative function of the nervous system, not only with regard to the form of the behavior pattern, but also with regard to its control. The creative component of thought, upon this hypothesis, is growth. . . . The real measure of the individual, accordingly, whether lower animal or man, must include the element of growth as a creative power."

All in all, this book is of major importance to embryologists, physiologists and psychologists, for its wealth of factual observation and the stimulating quality of the analysis of the data presented.

Miscellany

A SYSTEM OF CLASSIFICATION OF SUMMER CAMPS

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NEW YORK

The accompanying table, devoid of unnecessary detail, is offered as a tentative plan for the classification of summer camps. The urgent need for some standard method of supervision is apparent to those who have had occasion to make epidemiologic investigations in this field. The data submitted are based on personal experiences in the laboratory and field of the U. S. Army and U. S. Public Health Service and on epidemiologic investigations in my own laboratory. The more recent works on sanitation and numerous public health reports have been freely consulted. The relative values allotted to the various parts of this classification plan will perhaps have to be revised. They represent solely my own views. Placed in the hands of competent public health officials, this system of classification should serve as a working basis for the improved standardization and disinterested supervision of summer vacation and tourist camps.

Depending on the score, camps would be divided into three groups: grade A, 90 to 100 inclusive; grade B, 75 to 89 inclusive, and grade C, below 75. Theoretically, there should only be the grade A or "approved summer camp." The other grades would serve only for purposes of classification. Properly disseminated knowledge of the existence of suitable standards would stimulate owners of camps to attempt to attain the highest possible grade. It will be best under this plan to make annual surveys for purposes of reclassification.

DETAILED CONSIDERATION OF PLAN

1. *Terrain.*—(*a*) General Landscape: Location one of natural beauty. Shade trees, foliage and spacious grounds including level field for athletics and stream or lake for bathing and boating. Adequate protection against forest fires. Distant from, yet readily accessible to, main highway.

(*b*) Soil: Dry, porous, sandy.

(*c*) Wind: Protection against prevailing winds, especially at high altitudes, without obstruction to free circulation of air.

(*d*) Sun: Full exposure to solar rays for part of day.

(*e*) Drainage: Proper elevation, away from submerged or marshy ground. Sloping ground to allow for adequate running off of rain water away from camp site. Avoid drainage of dwellings higher up than camp. Graded gravel or concrete walks and road ways.

(*f*) General Cleanliness of Grounds: Refuse receptacles; good policing.

(*g*) Foliage: Clearing away of all underbrush and foliage of a poisonous nature.

2. *Housing.*—(*a*) Construction: i. Permanent housing. Preferably of concrete or brick, thoroughly waterproof, with adequate grading and drainage.

ii. Temporary housing (tentage). Preferably pyramidal tents of the army hospital type (sides furled in fair weather for sunning and ventilation). Raised flooring, preferably in sections for cleaning. Ditch about each tent with proper precautions for running off of water.

(*b*) Space Allotment: Minimum of 1,000 cubic feet of air space and 100 square feet of floor space per person, exclusive of that permitted for lockers.

(*c*) Lighting: Electric; preferably indirect, with adequate wattage for space covered.

(*d*) Ventilation and Sunning: Windows or tent flaps open at all times except during inclement weather, when board may be inserted beneath raised lower window sash. Cellophane on frame will not obstruct ultraviolet rays.

(*e*) Heating: Open fire in recreation hall or jacketed stove with fresh air shaft at bottom and screened inlet. Ample ventilation at all time. Steam or hot water heat where climate warrants it—from 68 to 70 F. indoor temperature with proper amount of humidity.

(*f*) Protection Against Inclement Weather: Housing of substantial type, properly roofed and leak proof, with damp proof walls. Bronze or copper screens of no larger than 16 mesh.

Outline of Plan for Classification of Summer Camps

Rating		
10	1. Terrain	(a) General landscape (b) Soil (c) Wind (d) Sun (e) Drainage (f) Cleanliness of grounds (g) Foliage
10	2. Housing	(a) Construction (b) Space allotment (c) Lighting (d) Ventilation and sunning (e) Heating (f) Protection against inclement weather (g) Protection against insects and vermin (h) General cleanliness
2.5	3. Community health record	(a) Physical and moral disturbances (b) Typhoid (c) Dysentery (d) Malaria (e) Diphtheria (f) Scarlatina (g) Hookworm and other intestinal parasites (h) Tick (i) Endemic goiter (j) Rabies
20	4. Water supply	(a) Adequacy (b) Source (c) Treatment of doubtful supply (d) Adequate supervision (e) Drinking devices (f) Ice (g) Plumbing
20	5. Sewerage system; garbage and refuse disposal	(a) Choice of system (b) Toilets (c) Garbage and refuse
15	6. Food	(a) Nutritive qualities (b) Source (c) Storage (d) Preparation (e) Serving
5	7. Control of insect and other animal life	(a) Domestic animals (b) Winged insects
2.5	8. Bathing	(a) Open streams (b) Shower and bathtub facilities
10	9. Medical supervision	(a) Choice of physician (b) Weekly physical examination (c) Complete records (d) Hospitalization facilities (e) Laboratory facilities (f) Sanitary inspection (g) Preventive hygiene (h) Hiking (i) Medical chest
2.5	10. Educational facilities	(a) Scope (b) Special subjects
2.5	11. Unavoidable hazards	(a) Lightning (b) Fire (c) Drowning (d) Contagious disease (e) Acute surgical conditions (f) Minor injuries (g) Snake bite

(*g*) Protection Against Insects and Vermin: Use of bronze or copper 16 mesh screens or mosquito nets. Daily spraying of crevices with insecticide. Exclusion of food, and dirty and wet clothing.

(*h*) General Cleanliness: Biweekly changing of bed linen and outdoor airing of bedding daily. Weekly inspection of person, lockers, clothing and bedding.

3. *Community Health Record.*—(*a*) Physical and moral disturbances.

(*b*) Typhoid.

(*c*) Dysentery.

(*d*) Malaria.
(*e*) Diphtheria.
(*f*) Scarlatina.
(*g*) Hookworm and other intestinal parasites.
(*h*) Tick.
(*i*) Endemic goiter.
(*j*) Rabies.

4. *Water Supply.*—(*a*) Adequate Supply: 100 gallons per person a day.

(*b*) Source: Free from seepage or drainage from privies, stables, homes or adjoining towns. Preferably from known good source outside the camp.

i. Surface waters. From unpolluted rivers and small streams in hilly, uninhabited, uncultivated regions. Intake in large fresh water lake located distant from shore.

ii. Subsoil or ground waters. Shallow wells to be walled or cased to below the water level; deep wells to the first impermeable stratum. Curb and covering of proper construction. Area about well to be kept scrupulously clean.

iii. Deep waters. Artesian wells. Proper protection, as in ii, from surface contamination.

(*c*) Treatment of Doubtful Water Supply: i. Preliminary sedimentation plus slow sand filtration.

ii. Chlorination (from 0.1 to 1 part per million of available chlorine).

iii. For small supplies use of the Berkefeld filter properly cleaned at intervals; use of Lister bag (1 Gm. tube of calcium hypochlorite to 36 gallons of water; let stand thirty minutes; test with iodide-starch-zinc sulphate solution).

(*d*) Adequately Supervised Water Supply: Regular tests for *Bacillus coli,* presence of which should condemn water as used:

i. At source } Break in water line with seepage.
ii. At tap }

(*e*) Drinking Devices: i. Universal use of the bubbling fountain.

ii. Wide distribution.

iii. Cleanliness.

(*f*) Ice: Regardless of source, never to be used in drinks or food. Cool by outside contact.

(*g*) Plumbing: i. Exposed outlet pipes and traps.

ii. Readily accessible grease traps for sink.

iii. Enamel or porcelain lined bath tubs and sinks.

iv. Freedom from leakage.

5. *Sewerage System, Garbage and Refuse Disposal.*—(*a*) Choice of System:

i. Water carriage. Septic tank followed by intermittent filtration or irrigation. Grade A.

ii. When running water is not available, use deep pits lined with water-tight concrete and covered twice daily with dry earth in order not to interfere with normal biologic action. Locate pits to leeward and distant from water supply. If flies are not kept away, treat daily with crude petroleum. Ultimately burn out pit. Protect pit against surface washings and cave-in. Grade B.

iii. Incineration. Use of Horsfall destructor providing carriage through camp properly supervised. Grade C.

(*b*) Toilets: Floors clean, of concrete. Wall about urinals and toilets of waterproof material (e. g., slate). Freedom from odors. Bowls, troughs and seats scoured daily. Room properly screened. Automatic flushing where water carriage exists. Free use of insecticide (borax or sodium fluoride). Screen all outlets. Toilet paper only to be used. In case of pits use of automatic closing seat-covers; pit to be dark and fly proof, with urinals emptying at an angle and screened. Daily treatment with petroleum.

(*c*) Garbage and Refuse: Incineration (type such as multiple shelf incinerator of Williamson).

6. *Food.*—(*a*) Nutritive Qualities: Ample, well balanced diet of good quality. i. Protein, 1 Gm. per kilogram, with sufficient fat and carbohydrate to satisfy caloric requirements. Inorganic salts and vitamins sufficient for body needs.

(*b*) Source: Avoidance of chemically sprayed fruits and vegetables, of those grown with aid of untreated human feces or of sows fed on human excreta.

(*c*) Storage: Proper refrigeration of all fresh food (below 50 F.). Careful inspection of canned foods for spoilage ("swelling"). Storeroom dry, well ventilated and free from vermin. Screening of all food.

(*d*) Preparation: i. All meats and fish to be fresh, of good quality and cooked before being served.

ii. Thorough soaking and washing with pressure sprays of all freshly grown foods eaten uncooked.

iii. Pasteurized milk and milk products only to be used.

iv. Storeroom and kitchen to be scrupulously clean, well lighted and ventilated; kitchen preferably opening on roomy porch, with abundance of shelving and drawers, connected directly with storeroom and all screened. Running water; smooth meat block; large range with hood and ventilating shaft; roomy ice-chest. Personnel free from disease (carriers or otherwise) and immaculately clean. Absence of vermin and winged insects. No domestic animals in kitchen; covered garbage cans located outside, emptied and scoured once a day. Whitewash cans and stand. Arnold pit, kitchen fire or crematory for kitchen waste.

(*e*) Serving: i. Dining hall light, properly ventilated and screened and adequately heated if necessary.

ii. Tables bare or covered with oilcloth to facilitate thorough scrubbing after each serving.

iii. Attractively served food, clean utensils and dishes.

7. *Control of Insect and Other Animal Life.*—(*a*) Domestic Animals: To be kept off grounds.

(*b*) Winged Insects: i. Drainage of stagnant streams and small pools of water.

ii. Oiling with crude petroleum.

iii. Filling-in of marsh land.

iv. Straightening and narrowing of streams.

v. Where conditions are favorable, opening of stream to salt water tides.

vi. Deepening of water by dikes.

vii. Clearing stream of vegetation and underbrush.

viii. Covering of cisterns, etc.

ix. Stocking stream with fish (Barbados), tadpoles, beetles and larvae of dragon flies.

x. Use of screening (no larger than 16 mesh), head or bed nets.

xi. Use of sprays (Flit, Fly-tox).

xii. Elimination of manure piles and other filth.

xiii. Scrupulous cleanliness about camp.

xiv. Use of sulphur, formaldehyde, camphor-phenol or pyrethrum fumes.

8. *Bathing.*—(*a*) Open streams to be free from fecal contamination and intestinal parasites. Adequate supervision and instruction of bathers. No walking about camp unshod.

(*b*) Where there are shower facilities or tubs, adequate light, ventilation, drainage and scrupulous cleanliness to be enforced. Tubs to be washed after individual use. Lifting of gratings, thorough scrubbing and flushing daily. Where gravel and soakage pits are used, interpose baffle boards and strainer to retain soap curds.

9. *Medical Supervision.*—(*a*) Choice of well trained hospital graduate.

(*b*) Weekly, complete physical examination of all of camp population, including help.

(*c*) Complete records to be kept, including physiologic as well as pathologic data.

(*d*) Adequate arrangements for transportation and hospitalization in nearby town in cases of acute and chronic illness.

(*e*) Adequate provision for routine urinalysis and examination of smears and diphtheria throat cultures. Care of minor injuries in camp.

(*f*) Systematic inspection of sanitary arrangements.

(*g*) Preventive Hygiene: i. Encouragement of universal diphtheria toxin-antitoxin inoculation in children of elementary school age.

ii. Exclusion of unsuitable subjects from vigorous exercise.

iii. Detection of physical and mental infirmities with notification of parents.

(*h*) Hiking: i. Exclusion of those with weak hearts or foot trouble.

ii. Early start and early return.

iii. Minimal amount of back-packing.

iv. Water to be carried from camp. Consumption moderate. Avoidance of sweets, salty food, excessive exposure to sun and dust. In emergency, boil water and cool or use weak tea.

v. Relaxation after meals.

vi. Clothing: Flannel shirt, raincoat, two pairs of light woolen socks fitting snugly, properly fitted army type of shoe, cotton underclothing, campaign hat.

vii. Disposal of waste. Choose location away from water supply and dig shallow trench for feces and urine; cover completely with earth after use. Refuse to be burned or buried.

(*i*) Medical Chest: i. Instruments, accessories and medication suitable for handling minor injuries and illnesses.

ii. Tetanus antitoxin, 50,000 units; diphtheria toxin-antitoxin, diphtheria antitoxin (50,000 units); antimeningococcus polyvalent serum, 100 cc.; cowpox vaccine; antivenom for snake bite (species of poisonous snakes in vicinity should be learned beforehand). Fuming nitric acid for bites of rodents and domestic animals.

(*j*) Telephone in camp for emergencies.

10. *Educational Facilities.*—(*a*) Scope: Mental, moral, physical, spiritual.

(*b*) Special Subjects: i. Swimming.

ii. Boating.

iii. Campcraft.

iv. Windcraft.

v. Nature study.

(*c*) Carefully chosen councilors for small groups.

11. *Unavoidable Hazards.*—(*a*) Lightning: Proper distribution of lightning rods. Avoidance of trees, house wiring and plumbing during storm.

(*b*) Fire: Emergency brigade.

(*c*) Drowning: Capable supervision of bathing.

(*d*) Contagious Disease: Careful daily medical inspection.

(*e*) Acute Surgical Conditions: Proper hospitalization at no great distance.

(*f*) Minor injuries.

(*g*) Snake Bite: Scarification and suction; use of antivenom.

667 Madison Avenue.

Teething and Illness.—There is an opinion, prevalent among some physicians, that many of the infant illnesses are the result of the physiological process of eruption of teeth. It is safe for every practitioner to assume that no acute illness of the infant is due to teething. If, however, after careful and repeated examinations of the sick infant, the doctor cannot determine any other cause for the illness, and he finds positive evidence of infection in the gums where teeth are being erupted, he will be justified in attributing the illness to the process of teething. The longer you search, and the more carefully you search, for the cause of the illness, the fewer times you will be content in making the diagnosis of teething as the cause of the infant's illness.—Baxter, G. E.: Some Common Problems in the Management of the Sick Infant, *West Virginia M. J.*, April, 1929.

Medicolegal

Failure to Discover Foreign Body in Eye

(Lippold v. Kidd (Ore.), 269 P. 210)

The plaintiff suffered an injury to his eye, Jan. 31, 1924. He employed the defendant, an eye specialist, to attend the injury. The defendant made an examination and found only a small foreign particle, which he removed. He bandaged the eye and subsequently gave the plaintiff six or seven treatments. He then instructed the plaintiff to return if he experienced further pain or trouble with his eye. The plaintiff did not return, but seven months later, August 30, he consulted Drs. W. and B., who discovered a sliver of steel in the eye. They were unable to withdraw the sliver with a magnet and several days later they removed the eyeball. The plaintiff sued the defendant, alleging negligence, and from an adverse judgment in the circuit court the defendant appealed to the supreme court of Oregon. The defendant contended that much of the testimony on which the plaintiff predicated his charge of negligence was inadmissible. The crux of the case, the court said, was what constituted ordinary care as determined by the facts as they appeared to an eye specialist on January 31, the date when the defendant first saw the plaintiff. In lieu of that, the witnesses for the plaintiff were permitted to testify with respect to the situation as of August 30. There was no testimony that, under the circumstances as they appeared to the defendant, January 31, the treatment fell short of the established standard. The expert witnesses for the plaintiff based their conclusions on their personal knowledge, their treatment of the plaintiff, the operation on the eye, what they observed when it was dissected, and the evidence they heard in the court room. The answers of these experts were insufficient to establish negligence, because the only premise with which they were familiar was that of August 30. If they undertook to base their conclusions on the facts as they existed, January 31, the question should have supplied the premise in hypothetical form.

The evidence tended to show that the defendant made no roentgenogram of the plaintiff's eye. The plaintiff testified that the defendant failed to make an examination of the interior of his eye with the ophthalmoscope. The foregoing facts, the court said, established a prima facie case of negligence. Negligence alone, however, is insufficient to establish liability. The evidence must show that such negligence was the proximate cause of the injury. Dr. F. testified that, when any foreign particle becomes impacted in the retina, sooner or later the retina becomes detached and the victim loses the sight of the eye, and that a piece of steel which penetrates the eyeball with sufficient force to embed itself in the posterior part of the eye eventually causes a shrunken eyeball and necessitates its removal. The same witness testified:

> Not a foreign body that penetrates the eyeball completely, when it lodges in the posterior sclera or retinal region, that doesn't materially change the pathology of the eye, whether you remove it then or later. It has done its work going through; it has done its damage. . . . No foreign body can be impacted in the retina and removed and leave a perfect eyesight; you will have a chronic inflammation and loss of sight gradually, with detached retina.

As against this testimony, Dr. W., an expert for the plaintiff, testified as follows:

> A small piece of detached retina, if not in the direct line of vision, would not necessarily destroy the vision. Many people have portions of retina detached for many years without affecting their direct vision, central vision.

In answer to a question as to whether or not, if the particle had been promptly removed, chronic inflammation would have resulted and loss of eyesight, gradually increased, Dr. W. answered that it might and might not. Before the plaintiff could recover for the injury to his eye, the court said, it was necessary that he should be possessed of an eye that a physician could rehabilitate. If the eye was already damaged beyond repair, he suffered no ill effects from the defendant's negligence. From the evidence submitted in the case, the supreme court could not see that when the plaintiff consulted the defendant his left eye was susceptible of rehabilitation. The court held,

therefore, that the plaintiff failed to prove that the defendant's negligence was the proximate cause of the removal of the eye and reversed the judgment of the lower court and instructed that court to enter judgment for the defendant.

Occupational Disease as an Accidental Injury

(Dillingham's Case (Me.), 142 A. 865)

The claimant, Dillingham, worked in a shoe factory and sustained what he claimed was leather poisoning as a result of handling wet leather. He proceeded against his employer under the workmen's compensation act and, from an award in favor of the claimant, the employer appealed to the supreme judicial court of Maine. Section 11 of the Workmen's Compensation Act provides: "If an employee . . . receives a personal injury by accident . . . he shall be paid compensation." Under this section, the court said, a disease to be compensable must be interpreted both as an "injury" and an "accident." An occupational or industrial disease is one normally peculiar to and gradually caused by the occupation in which the afflicted employee is or was regularly engaged and to which every one similarly working in the same industry is alike constantly exposed. The court said that apparently the weight of authority is to the effect that cases of occupational or industrial poisoning cannot be regarded as accidents, within the meaning of statutes which provide compensation for workmen for injuries caused by accident arising out of and in the course of their employment. The court concluded, therefore, that the injury suffered by the claimant was not, as a matter of law, received by accident and the award was reversed.

Use of Instruments by Chiropractor as Negligence

(People v. Mount (Calif.), 269 P. 177)

Mount, a chiropractor, was convicted of manslaughter for performing a criminal abortion and appealed to the district court of appeals, second district, division one, California. He was licensed as a chiropractor and had no legal right to practice surgery. The evidence tended to show that surgical instruments were used in producing the abortion. Mount urged that the court below committed error in admitting testimony that surgical instruments commonly used by surgeons in treating the vagina and cervix had been seen in his office approximately three years prior to the date on which he treated the deceased. This evidence was offered after Mount had testified that he had used no instruments in treating the deceased other than a vaginal electrode. It was, the court said, pertinent to the issues involved in the case as to whether or not Mount had used surgical instruments in treating the deceased. It was urged that the evidence related to a time so remote as to make it incompetent. The question as to the time when he had surgical instruments in his office, the court said, might go to the weight of the evidence but not to its competency. The fact that he used instruments in the treatment of his patient which his license as a chiropractor did not permit him to use in itself constituted negligence, the court said. There was testimony, also, that the conditions which caused the patient's death were induced by the careless and incompetent treatment given by Mount. The evidence was sufficient, the court held, to support the verdict of manslaughter, and the judgment of the lower court was affirmed.

Sale of Diplomas as "Medical Business"

(Young v. Board of Medical Examiners of California et al. (Calif.), 268 P. 1089)

The appellant's license to practice medicine and surgery was revoked on the ground that he was guilty of unprofessional conduct in that "he did use and employ advertising of medical business intended, and having a tendency, to deceive the public and impose on credulous and ignorant persons in a manner harmful and injurious to public morals and safety." He appealed to the district court of appeal, second district, division one, California, from a judgment rendered in favor of the board of medical examiners by the superior court, Los Angeles County. The evidence showed that the appellant conducted a medical college and that the diplomas issued by it fraudulently purported to be in recognition of faithful and conscientious work and study for the prescribed period in such college by the person to whom such diploma or certificate of graduation was issued. The appellant contended that this activity did not amount to "advertising of medical business." That the means and methods employed by the appellant in procuring purchasers of spurious diplomas constituted "advertising" was conceded. It was apparent, the court said, that the proper conduct of a medical college necessarily would deal with the physicians' art, or what might be termed the "medical business," and the issuance of a diploma from such college would be but incidental to such business. Such an act could not be said to be a part of any other occupation, profession or business; it related to and formed a part of the "medical business" only. The acts and conduct of the appellant, the court thought, necessarily had a tendency to impose on credulous and ignorant persons and were harmful and injurious to public morals and safety. The court held that the evidence presented against the appellant sufficiently established the charge made against him, and the judgment of the lower court was affirmed.

Society Proceedings

COMING MEETINGS

American Medical Association, Portland, Ore., July 8-12. Dr. Olin West, 535 North Dearborn Street, Chicago, Secretary.

American Association for the Study of Allergy, Portland, Ore., July 8-9. Dr. Warren T. Vaughan, 118 E. Franklin St., Richmond, Va., Sec'y.

American Bronchoscopic Society, San Francisco, July 6. Dr. L. H. Clerf, 128 South 10th Street, Philadelphia, Secretary.

American Dermatological Association, San Francisco, July 1-3. Dr. C. Guy Lane, 416 Marlborough Street, Boston, Secretary.

American Federation of Organizations for the Hard of Hearing, Cleveland, June 24-27. Miss Betty C. Wright, 1601 Thirty-Fifth Street, N. W., Washington, D. C., Secretary.

American Heart Association, Portland, Ore., July 9. Dr. Haven Emerson, 370 Seventh Avenue, New York, Secretary.

American Hospital Association, Atlantic City, June 17-21. Dr. Bert W. Caldwell, 18 East Division Street, Chicago, Executive Secretary.

American Laryngological, Rhinological and Otological Society, San Francisco, July 4-6. Dr. R. L. Loughran, 33 E. 63d Street, New York, Sec'y.

American Neurological Association, Atlantic City, May 27-29. Dr. Henry A. Riley, 870 Madison Avenue, New York, Secretary.

American Ophthalmological Society, Hot Springs, Va., June 10-12. Dr. Emory Hill, 501 East Franklin Street, Richmond, Va., Secretary.

American Society of Clinical Pathologists, Portland, Ore., July 5-8. Dr. H. J. Corper, National Jewish Hospital, Denver, Secretary.

American Urological Association, Seattle, July 1-3. Dr. Alexander Randall, Medical Arts Building, Philadelphia, Secretary.

Conference of State and Provincial Health Authorities of North America, Washington, D. C., May 31-June 1. Dr. A. J. Chesley, State Board of Health, St. Paul, Minn., Secretary.

Conference of State and Territorial Health Officers with the Public Health Service, Washington, D. C., June 3-4.

Idaho State Medical Association, Lewiston, July 5-6. Dr. J. N. Davis, Kimberly, Secretary.

Maine Medical Association, Poland Springs, June 17-19. Dr. B. L. Bryant, 265 Hammond Street, Bangor, Secretary.

Massachusetts Medical Society, Boston, June 10-12. Dr. Walter L. Burrage, 182 Walnut Street., Brookline, Secretary.

Medical Women's National Association, Portland, Ore., July 7-9. Dr. Elizabeth Kittredge, 3906 McKinley Street, Washington, D. C., Sec'y.

Montana, Medical Association of, Great Falls, July 17-18. Dr. E. G. Balsam, Box 88, Billings, Secretary.

National Tuberculosis Association, Atlantic City, May 27-30. Dr. C. J. Hatfield, Henry Phipps Institute, Philadelphia, Secretary.

New Hampshire Medical Society, Manchester, May 28-29. Dr. D. E. Sullivan, 7 North State Street, Concord, Secretary.

New Jersey, Medical Society of, Atlantic City, June 12-15. Dr. J. B. Morrison, 66 Milford Avenue, Newark, Secretary.

New Mexico Medical Society, Taos, June 12-14. Dr. L. B. Cohenour, 219 West Central Avenue, Albuquerque, Secretary.

New York, Medical Society of the State of, Utica, June 3-6. Dr. D. S. Dougherty, 2 East 103d Street, New York, Secretary.

New York State Association of Public Health Laboratories, Utica, June 3. Mr. M. B. Kirkbride, New Scotland Avenue, Albany, Secretary.

North Dakota State Medical Association, Fargo, June 6-7. Dr. J. G. Lamont, San Haven, Secretary.

Oklahoma State Medical Association, Oklahoma City, May 27-29. Dr. C. A. Thompson, Barnes Building, Muskogee, Secretary.

Pacific Coast Oto-Ophthalmological Society, Salt Lake City, July 1-3. Dr. Walter F. Hoffman, 817 Summit Avenue, Seattle, Secretary.

Rhode Island Medical Society, Providence, June 6. Dr. J. W. Leech, 369 Broad Street, Providence, Secretary.

Society of Neurological Surgeons, Montreal, Canada, June 3-5. Dr. Francis C. Grant, 133 South 36th Street, Philadelphia, Secretary.

Utah State Medical Association, Salt Lake City, July 1-3. Dr. M. M. Critchlow, Boston Building, Salt Lake City, Secretary.

Western Branch of the American Urological Association, Vancouver, B. C., July 5. Dr. W. E. Stevens, Flood Building, San Francisco, Secretary.

Wyoming State Medical Society, Casper, June 24-25. Dr. Earl Wheden, 50 North Main Street, Sheridan, Secretary.

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL in continental United States and Canada for a period of three days. Issues of periodicals are kept on file for a period of five years only. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested). Periodicals published by the American Medical Association are not available for lending, but may be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

American J. Diseases of Children, Chicago

37: 693-892 (April) 1929

*Sedimentation Reaction in Children. M. G. Peterman and S. J. Seeger, Milwaukee.—p. 693.
*Experimental Whooping Cough. L. W. Sauer and L. Hambrecht, Evanston, Ill.—p. 732.
*Atropine Fever in Early Infancy. P. J. White, St. Louis.—p. 745.
*Premature Infants. N. W. Clein, Seattle.—p. 751.
Hereditary Ectodermal Dysplasia (Congenital Extodermal Defect): Two Cases. A. A. Weech, Baltimore.—p. 766.
Insensible Perspiration in Infancy and Childhood: I. Constancy in Infants Under Standard Conditions and Effect of Various Physiologic Factors. S. Z. Levine, J. R. Wilson and M. Kelly, New York.—p. 791.
*Late Death as Result of Cerebral Hemorrhage at Birth. J. Glaser, Chicago.—p. 807.
*Pseudomembranous Enterocolitis and Mastoiditis Associated with Infection with Morgan's Bacillus. T. L. Sutton, San Francisco.—p. 814.
Congenital Duodenal Stenosis and Atresia. A. G. De Sanctis and J. D. Craig, New York.—p. 818.
Francis Glisson, 1597-1677. J. Ruhräh, Baltimore.—p. 832.

Sedimentation Reaction in Children.—From their experience with the sedimentation rate, Peterman and Seeger hesitate to advise its general use to the practicing physician. They believe that one determination of the rate is of little value in diagnosis and of no value in prognosis. A single normal or slightly increased or decreased rate means little. A single rapid rate indicates abnormality. Frequent leukocyte and differential counts have been of much more assistance in following the clinical course of disease than have frequent sedimentation readings. The sedimentation rate does not seem to indicate the degree of resistance to disease or the extent of the lesion in most cases.

Experimental Whooping Cough.—Sauer and Hambrecht, reporting on their experimental work, state that after a period of incubation of from one to three weeks, spontaneous, paroxysmal coughs followed the injection of *Bacillus pertussis* (Bordet-Gengou) into the larynx of five healthy young monkeys. Similar coughs followed inoculation into the nares of three healthy young monkeys. The white cell and differential blood counts usually showed the transient lymphocytosis characteristic of pertussis in human beings. The bacillus was recovered from deep throat cultures; also from the larynx, trachea and lungs after death. The bacillus was recovered during the height of the cough from an animal that had been inoculated with the bacillus recovered, in turn, from the lung of another coughing animal. Animals which recovered were immune to subsequent injections of various strains of *B. pertussis*.

Atropine Fever in Early Infancy.—White suggests that the effect of atropine be tried experimentally in patients with lesions in the region of the so-called basal ganglions where the temperature-regulating centers are supposed to be; for example, in patients with congenital athetosis. Patients with certain types of lesions of the brain are known to have labile temperatures. It would be most interesting to learn whether atropine can regularly produce fever in such patients.

Premature Infants.—Of 102 infants under observation in the premature station of the Sarah Morris Hospital, fifty-four were discharged in good condition; forty-eight died, and a complete necropsy was performed on thirty-six. In these, the pathologic processes found were studied by Clein with the clinical course as a background in an effort to evaluate the symptoms which had been in evidence. Marked cyanosis was observed in fifty-three of the 102 infants. Only two of the infants who died did not exhibit cyanosis at some time during the course of the illness. In the group of infants who exhibited cyanosis at birth and during the first few days, and who later showed progress with recurring cyanosis between the seventh and eighteenth day, infection was the common terminal complication. Diarrhea occurred in forty-three of the total series of cases, eighteen of which were fatal. In the latter, diarrhea followed infection, which, in many instances, complicated some primary pathologic process such as intracranial hemorrhage. Marked jaundice was a symptom in twenty-three cases of the total series—in thirteen of the infants who died and in ten of those who lived. Infratentorial hemorrhage was complicated by extreme jaundice in five cases. In all of these there was a complicating infection. Severe or persistent vomiting was present in forty-two infants. Seventeen cases occurred in the patients who died. Of this number, two were infants who probably died from infratentorial hemorrhage. This may have been a coincidence. The remaining fifteen deaths were associated with terminal infections or sepsis. In the group of infants who lived, the major symptoms of those having infections were diarrhea, vomiting, jaundice and distention. Diarrhea and vomiting were associated in most of the cases. Cyanosis was rarely observed in those who recovered. Acute infections occurred in fifty cases. Eighteen patients in this group died; in these, the infection was usually a terminal process or a secondary complication of some primary pathologic lesion present at birth. Infratentorial hemorrhage occurred in 50 per cent of the cases in which necropsy was performed; otitis media in 16.6; atelectasis, in 8.3; syphilis, in 11.11, and tuberculosis, in 5.5. The infants admitted when new-born or when 1 or 2 days of age that died shortly thereafter showed definite signs of immaturity of the tissues and organs. The usual cause of death was intracranial hemorrhage or atelectasis.

Late Death as Result of Cerebral Hemorrhage at Birth.—In the case reported by Glaser, death occurred at the age of 1 month as a result of a cerebral hemorrhage which took place at the time of birth.

Pseudomembranous Enterocolitis and Mastoiditis.—A case of pseudomembranous enterocolitis is presented by Sutton in which the patient later developed the clinical evidences of infection of the middle ear, and in which Morgan's bacillus was isolated from the heart blood and from the middle ear.

American J. Medical Sciences, Philadelphia

177: 461-608 (April) 1929

Relation of Cancer to Old Age. J. Ewing, New York.—p. 461.
*Serum Test for Diagnosis of Cancer Based on New Theory of Etiology. B. Gruskin, Chicago.—p. 476.
*Differential Diagnosis of Primary and Secondary Carcinoma of Bronchi. E. Weiss, Philadelphia.—p. 487.
*Spontaneous Nonrhythmic Variations in Blood Pressure Levels and "Silent Gap." L. H. Sigler, New York.—p. 494.
*Acute Massive (Nonsurgical, Nontraumatic) Pulmonary Atelectasis: Two Cases. H. K. Mohler, Philadelphia.—p. 507.
Volume and Hemoglobin Content of Red Blood Corpuscle. M. M. Wintrobe, New Orleans.—p. 513.
*Blood Sedimentation Test Combined with Serum Reaction in Diagnosis and Prognosis of Tuberculosis: 147 Cases. E. M. Schloss, Philadelphia, and P. R. Miller, Baltimore.—p. 523.
Artificial Production of Punctate Basophilia and Reticulation in Erythrocytes. W. E. Cooke, Wigan, England.—p. 537.
Poliomyelitis: Preparalytic Period with Results of Serum Therapy. W. D. Ayer, Syracuse, N. Y.—p. 540.
*Nervous Complications Following Use of Therapeutic and Prophylactic Serums. F. Kennedy, New York.—p. 555.
Sex, Age and Seasonal Distribution of Tetany in Orphanages in Peking. S. Liu and F. Chu, Peking, China.—p. 559.
*Carbon Dioxide in Treatment of Hypostatic Pulmonary Congestion. R. E. Burns and W. S. Middleton, Madison, Wis.—p. 564.
Toxic Psychoses: 100 Cases. F. C. Hill and G. Wilson, Philadelphia.—p. 569.

Serum Test for Diagnosis of Cancer: New Theory of Etiology.—The theory is advanced by Gruskin that normal tissue equilibrium is dependent on a balance maintained by the opposing action of lytic agents produced, respectively, by connective tissue and epithelial cells, and that neoplasia is the result of a lack of such lytic agents on the part of the tissue invaded. On the basis of this theory, a diagnostic test for malignant disease has been developed. The principle of this test is based on the homologous relationship between embryonic cells and the serums of patients suffering from malignant disease. The homologous nature of embryonic cells of different mammalians has been demonstrated by the ability to develop amboceptors and antigens with embryonic cells of different mammals. A new source and technic for obtaining embryonic

cells is described. This test has been employed in a group of cases of malignant and nonmalignant diseases and results have been obtained which tend to substantiate the proposed theory and validity of the test. The results obtained are of theoretical interest in substantiating the proposed hypothesis and are believed to be of practical importance in the serodiagnosis of carcinoma and sarcoma.

Differential Diagnosis of Primary and Secondary Carcinoma of Bronchi.—Weiss cites cases that illustrate how an abdominal tumor with metastases to mediastinal lymph nodes may cause bronchial compression, producing symptoms and signs of chest disease which dominate the clinical picture. In one instance cited, bronchoscopy with biopsy did not establish the secondary nature of the bronchial new growth. Moreover, even at postmortem, up to the time that the primary new growth was found in the head of the pancreas, it was thought that the cancer was primary in the bronchus. In another case huge enlargement of the liver due to metastases from a bronchial carcinoma misled Weiss into believing that the primary new growth was in the abdomen and that the secondary lesion was in the lung. Weiss stresses the importance of differentiating primary and secondary carcinoma of the bronchi, because early recognition and prompt treatment of primary bronchial carcinoma offers some hope from the standpoint of improvement and possible cure.

Spontaneous Nonrhythmic Variations in Blood Pressure Levels and "Silent Gap."—Certain persons have persistent fluctuations in their blood pressure levels even under conditions of rest. Such fluctuations are most prominent in hypertensive patients showing periodic variations, but occur also to a lesser extent in all other hypertensive patients, and in some with normal blood pressure. Because of its constant occurrence in hypertensive persons and its occasional presence in those with normal blood pressure, Sigler says that one may consider the latter as heading toward hypertension. To explain persistent fluctuations in pressure, it must be assumed that a disturbance occurs in the rhythmic vasomotor discharges that normally maintain the blood pressure at a constant level when the person is at rest, and enables a sort of "vasomotor arrhythmia" to set in. The recognition of the existence of such "normal" fluctuations will avoid the mistaken belief in the potency of some therapeutic factors, or in the efficiency of some blood pressure tests.

Acute Massive Pulmonary Atelectasis.—The occurrence of pulmonary atelectasis is reported by Mohler in a case of pneumonia and in one of cancer of the stomach.

Blood Sedimentation Test in Serum Reaction in Tuberculosis.—The serum test employed by Schloss and Miller in this study is one which depends for its positive result on precipitin phenomena occurring in the presence of tuberculous precipitin and possibly other specific antibodies in the patient's serum. The reaction is therefore intended merely as a means for ascertaining the presence and approximate combining power of tuberculous antibodies in the blood serum of a given patient. In all, 147 persons were used for this series of tests: normal persons, patients under observation and those with incipient, moderately advanced and far advanced tuberculosis. In 136 instances the combinations of the sedimentation and serum test results give pictures which, when interpreted in the light of the previously constructed scheme of possibilities, closely approximate those determinable by the usual methods of diagnosis (symptomatology, physical signs, sputum examination and x-rays). In eleven cases only are the results of the test at variance with the clinical condition as indicated by such methods.

Therapeutic and Prophylactic Serums Causing Nervous Complications.—The belief is held by Kennedy that the preparalytic stage of poliomyelitis presents a distinct clinical entity; that diagnosis can be, and should be, made early in that stage and that human convalescent serum, administered intraspinally in this period, is of value in preventing paralytic sequelae—the earlier in this period, the more successful the result. It is recommended that in any community in which poliomyelitis is occurring, a service be established with available convalescent human immune serum and a personnel of diagnosticians, preferably a laboratory technician well experienced as to lumbar punctures, and, if possible, an epidemiologist, a sanitary engineer, an entomologist and a competent administrator. Early diagnosis in the preparalytic stage can be made, patients isolated and appropriate treatment given; and, what is most important, by such concentrated effort and study, the distinctive mode or modes of spread may be discovered. Then, and not until then, will this treacherous disease be controlled.

Carbon Dioxide in Treatment of Hypostatic Pulmonary Congestion.—Inhalations of 5 per cent carbon dioxide in 95 per cent oxygen have been given by Burns and Middleton to ten patients with fractures of the neck of the femur. This group constituted the poorest possible physical risk. All the patients were very old. Many of them had been transported to the hospital from a distance. As a rule, the fractures had not been reduced as soon as they might have been. In one case an interval of two weeks had elapsed between the occurrence of the fracture and its reduction. Two of the patients died. In six of the total of ten cases, hypostatic congestion was established on the basis of decreased vibratory phenomena, suppressed breath sounds and showers of fine crackling râles in the dependent portion of the lungs. In two of the cases there was dramatic relief of the respiratory distress and cyanosis, with coincident clearing of the physical signs of hypostatic pulmonary congestion. This group of patients is contrasted with another group of ten with fracture of the femur in whom carbon dioxide was not used, because it was considered unnecessary. Four of this control group died. No rule can be formulated for the dosage of carbon dioxide under these circumstances. Strict attention must be paid to the respiratory response and to the comfort of the patient. As soon as the patient begins to show signs of discomfort or fatigue, the administration of the gas is stopped. Ordinarily a patient will show some distress after two or three minutes. The interval between the inhalations can be determined only by the judgment of the operator. In some cases it is given every hour, in others every three hours, depending on the condition of the patient. Since hypostatic pneumonia is usually a complication of the first week, the advised use of carbon dioxide is especially important during this period. The method should be considered prophylactic rather than curative. The suspicion or actual existence of a pneumonia is an absolute contraindication to its exhibition.

American J. Physical Anthropology, Philadelphia

12: 363-530 (Jan.-March) 1929

Physical Measurements of Female Students at University of Minnesota: Body Build and Vital Capacity. C. M. Jackson, Minneapolis.—p. 363.
Revised Methods of Interpreting and Formulating Palmar Dermatoglyphics. H. Cummins, New Orleans; H. H. Keith, New York; C. Midlo, New Orleans; R. B. Montgomery, La Valle, Wis., and H. H. Wilder and I. W. Wilder, Northampton, Mass.—p. 415.
*Blood Groups of Canadian Indians and Eskimos. R. R. Gates, London. —p. 475.

Blood Groups of Canadian Indians and Eskimos.—The results of blood tests made by Gates in small numbers of Indians in the Mackenzie River valley indicate that four different Athapaskan tribes agree in their blood grouping, the seventy-one individuals tested giving 84.5 per cent O and 15.5 per cent A. This is in accordance with blood tests of other Indian tribes. In contrast with these results, sixteen Eskimos tested, who came from the region of the Mackenzie River delta and a few hundred miles of arctic coast east and west of this area, gave 25 per cent O, 25 per cent A, 44 per cent B, and 6 per cent AB. This may be due to crossing with white persons, although there is no evidence of it in the physical appearance of these Eskimos. These facts are discussed in relation to theories of blood grouping origin and dispersal and anthropologic views of the origin of the Eskimo and Indians. It is suggested that the agglutinogen A arose in the human race much earlier than B.

American J. Roentgenol. & Rad. Therapy, New York

21: 207-312 (March) 1929

Roentgen Study of Colonic Diverticula. J. T. Case, Battle Creek, Mich. —p. 207.
Roentgenologic Findings in Mitral Stenosis and Insufficiency. D. Steel, Cleveland.—p. 220.
Rôle of Roentgen Ray in Determining Resectability of Gastric Cancer. A. B. Moore, Rochester, Minn.—p. 226.
Comparison of Efficiency of Valve Tube and Mechanically Rectified Roentgenographic Machines. F. W. Bishop and S. L. Warren, Rochester, N. Y.—p. 229.

Basis for Dosage Determination in Interstitial Irradiation. E. H. Quimby and H. E. Martin, New York.—p. 240.
Radiotherapy in Chronic Myelogenous Leukemia. E. T. Leddy, Rochester, Minn.—p. 250.
Studies of Thymus, with Roentgen Findings. C. W. Perkins, Port Chester, N. Y.—p. 256.
Observations on Eight Years' Experience in Treatment of Thymus Gland in Infants and Young Children. M. J. Kinney and R. G. Taylor, Los Angeles.—p. 263.
Roentgen Diagnosis and Treatment of Enlarged Symptomless Thymus. F. W. O'Brien, Boston.—p. 271.

American Review of Tuberculosis, Baltimore

19: 353-460 (April) 1929

Pulmonary Acoustics: I. Apparatus for Recording Respiratory Sounds. P. F. Metildi and R. S. Lyman, Rochester, N. Y.—p. 353.
Id.: II. Transmission of Tracheal Sounds Through Freshly Exenterated Sheep's Lungs. R. R. Hannon and R. S. Lyman, Rochester, N. Y.—p. 360.
Sources of Acid-Fast Bacilli. S. J. Maher, New Haven, Conn.—p. 376.
Cancer of Lungs. F. L. Hoffman.—p. 392.
Tuberculosis Among American Indians. S. J. Maher, New Haven, Conn.—p. 407.
Analysis of 1,000 Deaths from Pulmonary Tuberculosis Among Insured Policy Holders. L. H. Lee, Los Angeles.—p. 412.
Experience of Philadelphia's Tuberculosis Patients in Clinics and State Sanatoriums. D. E. Wiesner and L. H. Smith, Philadelphia.—p. 414.
Accidental Pneumoperitoneum as Complication of Artificial Pneumothorax. L. Elrick, Denver.—p. 427.
Iodized Oil in Pulmonary Tuberculosis. E. K. Geer, F. F. Callahan and D. G. Gardiner, St. Paul.—p. 434.
Periodic Febrile Exacerbations in Pulmonary Tuberculosis. I. Rappaport and R. T. Ellison, Philadelphia.—p. 440.
Erythema Nodosum with Negative Tuberculin Tests: Cases. E. Lagergren, Göteborg, Sweden.—p. 447.
*Sickle Cell Phenomenon in Tuberculosis Patients. V. B. Dolgopol and R. H. Stitt, New York.—p. 454.

Sickle Cell Phenomenon in Tuberculous Patients.—The incidence of the sickle cell phenomenon in seventy-seven tuberculous negro patients was found by Dolgopol and Stitt to be 5.2 per cent, as against 6.5 per cent in 1,685 patients examined by different investigators. In the hereditary meniscocytosis a greater prevalence of bizarre cells in the central portion of moist-chamber blood preparations is due to a greater asphyxiation of the erythrocytes in the center of the drop. Chronic anoxemia, caused by a disease or compression of the lungs, is not an etiologic factor in the development of the meniscocytic anemia from hereditary meniscocytosis. Tuberculosis, syphilis and secondary anemia cannot be regarded as etiologic factors in the development of the meniscocytic anemia.

Annals of Surgery, Philadelphia

89: 481-640 (April) 1929

*Pulmonary Infarction and Embolism. C. E. Farr and R. Spiegel, New York.—p. 481.
*Diaphragmatic Hernia: Repair by Two-Stage Operation Employing Preliminary Extrapleural Thoracoplasty. G. L. Carrington, Burlington, N. C.—p. 512.
*Normal Thickness of Pyloric Muscle and Influence on It of Ulcer, Gastro-Enterostomy and Carcinoma. A. Horwitz, W. C. Alvarez and H. Ascanio, Rochester, Minn.—p. 521.
Perforated Peptic Ulcer. J. B. Deaver, Philadelphia.—p. 529.
*Acute Inflammation of Meckel's Diverticulum. W. L. Wolfson and B. Kaufman, New York.—p. 535.
*Mortality of Intestinal Obstruction: 124 Cases. S. Brill, Philadelphia.—p. 541.
Bilateral Adenocarcinoma of Breast. H. D. Caylor and V. C. Hunt, Rochester, Minn.—p. 549.
Bone Changes in Gaucher's Splenomegaly. H. Milch and M. Pomeranz, New York.—p. 552.
Osteomyelitis of Vertebrae. A. O. Wilensky, New York.—p. 561.
Osteoporosis of Humerus Following Fracture. N. S. Ransohoff, New York.—p. 571.
Treatment of Separation of Lower Epiphysis of Femur by Fraction. E. Gold, Vienna, Austria.—p. 577.
*Fractures of Tibia Involving Knee. H. S. Steuer, Cleveland.—p. 580.
Treatment of Difficult Fractures of Both Bones of Leg. N. W. Cornell, New York.—p. 591.
*Value of Closing Compound Fractures by Skin Plastic. J. E. Cannaday, Charleston, W. Va.—p. 597.
Treatment of Fractures of Clavicle: 422 Cases. C. W. Lester, New York.—p. 600.
Treatment of Supracondylar Fracture of Humerus. W. J. Potts, Oak Park, Ill.—p. 607.

Pulmonary Infarction and Embolism.—Among 1,116 autopsies analyzed by Farr and Spiegel there were thirty cases of fatal pulmonary embolism, an incidence of 2.68 per cent. The authors attempt to evaluate the importance of pulmonary embolism as the cause of sudden death. Cardiac embarrassment appears from the data to be more important than the sudden encroachment on the margin of safety of lung tissue. The symptoms of pulmonary embolism are strikingly similar to those of sudden cardiac death, as in coronary occlusion. Traditionally, emphasis has been put on the importance of an immediate antemortem cause for precipitating the embolism. In several instances, the obvious age of the pulmonary embolus indicates the fallacy of this point of view, and the authors profess skepticism as to any essential significance of straining at stool and sitting up in bed. In younger individuals, pulmonary infarction is more frequent than massive pulmonary embolism. The onset is earlier and the course mild. This is attributed to the better general circulation, because of which thrombotic fragments are washed away and the larger, more disastrous thrombi are not enabled to form later in the postoperative course. In general, the onset of symptoms is accompanied by a sharp rise in temperature, of shorter duration than the symptoms, and unaccompanied by proportionate changes in the pulse rate and respiration.

Repair of Diaphragmatic Hernia by Employing Preliminary Extrapleural Thoracoplasty.—The first stage of the operation described by Carrington consists of a preliminary extrapleural thoracoplasty, involving the lower part of the chest on the affected side. The second stage, the repair operation, may be done through a thoracic, an abdominal, or a combined thoraco-abdominal incision. In the case reported the operation was done through a thoraco-abdominal incision, and the patient was cured.

Normal Thickness of Pyloric Muscle: Influence on Ulcer, Gastro-Enterostomy and Carcinoma.—In forty-seven adults without gastroduodenal disease reported on by Horwitz et al., the pyloric muscle varied in thickness from 3.8 to 8.5 mm., with an average of 5.8 ± 0.1 mm. The measurements varied with the weight, height and age of the subject and with the type of fixation (embalming fluid or Kaiserling solution) used. In the absence of obstruction, duodenal ulcer seems ordinarily to have little influence on the thickness of the pyloric muscle. Occasionally it appears to produce atrophy, and when obstruction is present there sometimes is hypertrophy. Gastric ulcer generally produces hypertrophy. Gastro-enterostomy tends to produce atrophy of the pyloric muscle. Carcinoma in the pars pylorica ordinarily has little effect, but occasionally it is associated with hypertrophy of the muscle. These observations lend support to the thesis that the prompt relief of pain after gastro-enterostomy is due at least in part to the immediate removal of strain and overwork from the muscle in the pyloric region.

Acute Inflammation of Meckel's Diverticulum.—In one of four cases of Meckel's diverticulitis reported on by Wolfson and Kaufman, a preoperative diagnosis was made on the basis of the repeated or persistent colicky pains centered about the umbilicus, recurrent vomiting, high temperature, toxicity and distention. The distention was out of proportion to the tenderness and rigidity as observed in acute and early peritonitis. Attention was directed to the signs and symptoms of an inflamed abdominal viscus, plus early and partial obstruction.

Mortality of Intestinal Obstruction.—Among 124 cases coming to operation there were forty-five deaths, a mortality of 36.3 per cent. As a partial explanation of the high mortality, Brill believes that a grouping of intestinal obstruction is desirable because of the different factors concerned in the etiology, the variations in surgical technics and the different grades of toxemia encountered. The mortality rates of the various groups were: chronic type, 19.0 per cent; acute type, 30.1 per cent, and acute postoperative ileus, 80.0 per cent.

Fractures of Tibia Involving Knee.—Fracture of the upper extremity of the tibia was found by Steuer in 1.2 per cent of the 1,310 skeletons examined. It increases in frequency up to 60 years of age, and most examples are found in skeletons between 40 and 60 years. Thereafter, the percentage diminishes, probably because older people are less able to withstand the accident and its complications. In 50 per cent the lateral tuberosity was alone involved. In another 25 per cent both tuberosities were injured. The remaining 25 per cent included fractures of the medial tuberosity and the intercondyloid eminence. The fracture may be a relatively minor one, unrecognizable clinically and registered anatomically by a mere crack

in the articular surface. This occurred in 25 per cent. Of the more extensive fractures, there are three successive phases or classes. The first is a stave of the entire upper extremity on the shaft. The second is a comminuted fracture with splitting off, and in some instances impaction also, of one tuberosity. The third is a depressed fracture of one condyle with disorganization of the tuberosity but without stave of the extremity or splitting of the tuberosity.

Value of Closing Compound Fractures by Skin Plastic.—Cannaday sees a great advantage accruing from the application of ordinary plastic methods which aim to cover and protect the bone at the site of fracture and to prevent not only prolonged invalidism but deformity and the formation of dense scar tissues directly over the bone.

Colorado Medicine, Denver

26: 95-122 (April) 1929

County Society, Progressive Institution. J. J. Waring, Denver.—p. 97.
Diaignostic Tuberculosis Clinics in Colorado. C. O. Giese, Colorado Springs.—p. 102.
Rabies in Colorado. E. R. Mugrage, Denver.—p. 104.
Sunlight and Life. B. L. Wyatt, Tucson, Ariz.—p. 107.
Thyroid Diagnosis. J. E. Struthers, Denver.—p. 110.
Lamp to Facilitate Localization of Rectal Abrasion. A. J. Chrisholm, Denver.—p. 114.
Psammona in Frontal Lobe of Brain: Case. G. E. Rice, Pueblo.—p. 115.

Johns Hopkins Hospital Bulletin, Baltimore

44: 215-271 (April) 1929

*Syndrome Produced by Aneurysm At or Near Junction of Internal Carotid Artery and Circle of Willis. F. Albright, Baltimore.—p. 215.
Comparison of Amylase Concentration in Saliva of Infants and Adults. W. B. Mayer, Durham, N. C.—p. 246.
*Radiopaque Bismuth Suspension for Anatomic, Histologic and Pathologic Research. E. C. Hill, Baltimore.—p. 248.

Syndrome at or Near Junction of Internal Carotid Artery and Circle of Willis.—The symptoms in two cases in which the diagnosis of ruptured intracranial aneurysm near the junction of the internal carotid artery and the circle of Willis was made are reported by Albright, with the autopsy observations in one case. Thirty cases of aneurysm in this region which showed localizing symptoms before death are abstracted from the literature. The entire series of thirty-two cases fall into five etiologic groups: mycotic, traumatic, syphilitic, arteriosclerotic and congenital. The symptomatology can be divided into two main subgroups: (*a*) neighborhood symptoms due to involvement of structures in this region, and (*b*) symptoms arising from leakage of blood into the subarachnoid space. The neighborhood symptoms, except in the larger aneurysms, as a rule become manifest only after partial rupture of the aneurysm and the formation of a false aneurysm. The commonest neighborhood symptoms are internal and external paralysis of the third nerve and involvement of the first branch of the fifth nerve. The third nerve was involved in every case in the series. Relief of pain by obliteration of the common carotid artery in the neck was a helpful diagnostic sign in one of the author's cases. The internal carotid artery was ligated in the neck without success in one of the newly reported cases. The possibility of relieving this condition by surgery is discussed but no conclusions are reached.

Radiopaque Bismuth Suspension for Research.—A method using bismuth oxychloride (subchloride) suspended in a solution of gum acacia has been found by Hill to be most satisfactory for postmortem roentgenographic study of the vascular systems. For most purposes a suspension of 20 per cent bismuth oxychloride in 11 per cent solution of acacia gives excellent delineation, but for specific tissues the percentages of both the bismuth and the acacia must be varied to secure optimal results. The acacia serves as an agent to aggregate the finely divided particles of bismuth, and by employing cloth filters of various meshes unit masses of any desired size may be obtained. Tissue injected with this radiopaque suspension may be studied microscopically either as cleared specimens or in stained histologic sections; in both, the bismuth is clearly delimited from the surrounding tissues. To prepare 500 cc. of this radiopaque suspension according to the formula for general use, about 250 cc. of distilled water is brought to a boil in a 1,000 cc. beaker. The general formula requires an 11 per cent solution of acacia, in which is suspended 20 per cent bismuth oxychloride. Consequently, 55 Gm. of pulverized acacia is slowly dissolved in the 250 cc. of water. Boiling is no longer essential when the solution is completed. The 1,000 cc. container is then tilted to an angle of 45 degrees and 100 Gm. (20 per cent) of the Merck or Mallinckrodt bismuth oxychloride is carefully rubbed into a paste with a spatula against the side of the beaker. As the paste composed of the acacia solution and the bismuth is formed, it is allowed to enter the solution until all of the bismuth is in suspension. Sufficient water to complete the required 500 cc. is then added to the mixture. While still warm, the suspension is poured through the toweling in the manner already described. The maximal and minimal percentages of bismuth, which so far have met all requirements, range from 5 to 40 per cent, while the solution of acacia varies between 2 and 25 per cent. When the highest percentages of each are used, the resultant mixture becomes a paste and requires a very loosely woven textile for semifiltration. However, if the suspension contains only the lowest percentages of these substances and has been passed through a fine mesh fabric, such as silk or linen, a few of the bismuth particles may appear separately, and the loosely bound groups will be small enough to penetrate the minute lumen of lymphatics or the smallest channels.

Journal of Industrial Hygiene, Baltimore

11: 85-106 (March) 1929

Cross Connections Between Industrial and Public Water Supplies. E. S. Chase, Boston.—p. 85.
Dust Hazard in Abrasive Industry. W. I. Clark, Worcester, Mass.—p. 92.
Absenteeism in Coal Miners. H. M. Vernon and T. Bedford, London, England.—p. 97.

Journal of Preventive Medicine, Baltimore

3: 81-165 (March) 1929

Septic Sore Throat in 1928 in Massachusetts: Epidemiology. H. L. Lombard, Boston.—p. 81.
*Incubation Period of Poliomyelitis. W. L. Aycock and E. H. Luther, Boston.—p. 103.
*Transfer of Tuberculosis by Dust and Other Agents. A. E. Augustine, Philadelphia.—p. 121.
Problem of Obtaining a Trend Line for Epidemiologic Data. G. E. Harmon, Cleveland.—p. 139.
"Food Poisoning" Produced in Monkeys by Feeding Living Salmonella Cultures. G. M. Dack, E. O. Jordan and W. L. Wood, Chicago.—p. 153.
Pathogenicity of Morgan's Bacillus: Thirteen Cases Attributable to Infection with This Organism. L. C. Havens and C. Ridgway, Montgomery, Ala.—p. 159.

Incubation Period of Poliomyelitis.—Data bearing on the incubation period of poliomyelitis have been collected by Aycock and Luther from the following sources: milk-borne outbreaks; cases following tonsillectomy; isolated groups of cases in the same locality where contact could not be traced; cases in which a single known contact occurred; certain instances of multiple cases in families in which the individuals had separated before onset of the disease, and an analysis of all cases observed in 1928 in Massachusetts, with known contact, in which an interval of separation had occurred prior to onset. In all cases in which the time of exposure can be set within narrow limits, the apparent incubation falls within a period of from six to twenty days. In all cases in which the last exposure occurred less than six days preceding the onset of the secondary case, the duration of exposure is such that the incubation period could likewise have fallen within these limits. In none of the observations reported was the incubation period necessarily shorter than six days. In some of these observations there is evidence that the infectious period of the disease may extend from the fourteenth day preceding the onset of symptoms to at least the fifth day of the disease. The incubation period observed in the experimental disease in monkeys following inoculation of fully active virus was most often six or seven days, but varied from four to fifteen days. Longer incubation periods were observed following inoculation of modified virus.

Transfer of Tuberculosis by Dust and Other Agents.—The evidence amassed by Augustine suggests that the demonstration of virulent tubercle bacilli in dust collected from the rooms or clothing of patients with open tuberculosis may be used as a measure of the danger to which those in contact with the patient are subjected. Dust from the rooms or clothing of patients who keep themselves clean contain tubercle bacilli

much less frequently than dust from uncleanly homes and people. Tubercle bacilli are recovered more frequently from the rooms of women than of men with open tuberculosis, and less frequently from the clothing of women than of men. These relations may be explained by the greater personal cleanliness of women and their inability, when ill, to keep their houses clean. Tubercle bacilli are recovered more frequently from the homes and clothing of colored than of white patients. The number of tubercle bacilli in the sputum of the patient is a factor in determining the presence or absence of tubercle bacilli in the surrounding dust.

Journal of Urology, Baltimore

21: 417-526 (April) 1929

Treatment of Complete Rupture of Posterior Urethra, Recent or Ancient, by Anastomosis. H. H. Young, Baltimore.—p. 417.
Observations on Solitary Cysts of Kidney. C. F. Branch, Boston.—p. 451.
*Roentgen-Ray Sign in Diagnosis of Unilateral Renal Tuberculosis. R. L. Dourmashkin, New York.—p. 455.
Ureteral Diagnostic Methods and Their Interpretations. O. S. Fowler, Denver.—p. 465.
Ureterography with Dilating Catheter. H. A. R. Kreutzmann, San Francisco.—p. 471.
Dilatation of Ureters and Renal Pelves in Pregnancy. M. I. Seng, Montreal.—p. 475.
*Scirrhous Carcinoma of Ureter. N. P. Rathbun, New York—p. 507.
Spontaneous Rupture of Urinary Bladder. I. R. Sisk and J. B. Wear, Madison, Wis.—p. 517.
Proof of Impossibility of Cauterizing Urethral Glands Through Urethroscope. E. W. Hirsch, Chicago.—p. 523.

Roentgen Ray in Diagnosis of Unilateral Renal Tuberculosis.—Obliteration of the pelvic curve of the ureter, as determined by a shadowgraph catheter on the affected side, was noted by Dourmashkin in 84.6 per cent of cases of unilateral renal tuberculosis. As the pelvic curve of the ureter varies greatly in different individuals, the sign is of value only when both ureters are outlined by opaque catheters, in which case a marked asymmetry will be noted. The obliteration of the curve is probably due to a shortening of the ureter as a result of a tuberculous lesion. The sign may be present in conditions other than tuberculosis and if observed should call for ureteropyelographic study. The sign may be observed in cases with no apparent lesion, probably as a result of straightening out of the ureter by a stiff catheter acting as a splint. The frequency with which it occurs in tuberculous patients should render it of value in doubtful cases or when the tuberculous infection is not suspected at all.

Scirrhous Carcinoma of Urinary Bladder.—Rathbun's patient, a man, aged 58, had been subjected to a radical operation for scirrhous carcinoma of the left breast. He remained perfectly well until August, 1927, when he noticed blood in the urine which persisted for one day. This recurred at intervals during the next two months, occasionally lasting for one day, at other times being noted only with one act of urination. On careful questioning he recalled that for a few months preceding the bleeding and lasting until the time of examination there had been an occasional dull ache referred to the left loin. This, however, had not been a prominent symptom. He appeared to be in perfect health. The general examination was entirely negative except for a slight tenderness on deep pressure and percussion over the left costovertebral angle. There was no evidence of any local recurrence of the breast lesion. In November a diagnosis was made of renal tumor, probably carcinoma. A left nephrectomy was done. At the junction of the pelvis and ureter there was a firm nodule, 1.5 cm. in diameter, in the ureteral wall. This, on section, proved to be a mammary carcinoma metastatic in the ureteral wall.

Laryngoscope, St. Louis

39: 211-276 (April) 1929

Lung Abscess: Etiology and Medical Treatment. J. A. Miller, New York.—p. 211.
Id.: Roentgenologic Diagnosis. L. Le Wald, New York.—p. 214.
Bronchoscopic Diagnosis and Treatment of Lung Abscess. S. Yankauer, New York.—p. 215.
Surgical Diagnosis and Treatment of Lung Abscess. A. V. S. Lambert, New York.—p. 224.
Contribution to Surgical Indications in Purulent Labyrinthitis and Otitic Meningitis. S. J. Kopetzky and R. Almour, New York.—p. 228.
Neurosurgical Treatment of Brain Abscess. J. E. J. King, New York.—p. 246.
Aids for Hard of Hearing. H. Newhart, Minneapolis.—p. 248.

Medical Journal and Record, New York

129: 361-420 (April 3) 1929

Legal Aspects of Patient's Consent to Operation. J. B. Carnett, Philadelphia.—p. 361.
*New Operation for Chronic Purulent Mastoiditis. J. M. Smith, New York.—p. 364.
Thrombo-Angiitis Obliterans (Buerger's Disease). A. M. Rechtman, Philadelphia.—p. 367.
Obstruction of Lower Urinary Tract. W. S. Pugh, New York.—p. 369.
Recent Progress in Orthopedics. S. W. Boorstein, New York.—p. 372.
Rôle of Bacteria in Pyorrhea. T. D. Beckwith, A. Williams and E. J. Rose, Berkeley, Calif.—p. 376.
Sidelights on Epidemics in England in the Sixteenth Century. W. R. Riddell, Toronto.—p. 380.
Mucous Membrane Relief of Stomach in Roentgenogram. H. Chaoul, Berlin, Germany.—p. 383.
Gastrophotography: Gastrocamera, a New Apparatus for Photographing Interior of Stomach. S. Weiss, New York.—p. 390.
Routine Roentgen Examination of Gastro-Intestinal Tract. J. H. Swafford, Cleveland.—p. 392.
Barium Meal Simulating Intestinal Obstruction. D. H. Orgel, New York.—p. 396.
Behavior of Renal Sodium Chloride Threshold Under Treatment. H. A. Houghton, New York.—p. 399.
Hemorrhoidectomy with Collings Electrotome. E. I. Huppert, New York.—p. 401.
Corrective Apparatus for Lateral Curvature of Spine. C. R. Keppler, Newark, N. J.—p. 404.
Ayer Safety Spoon. S. H. Ayer, Boston.—p. 405.

New Operation for Chronic Purulent Mastoiditis.—The principle of the operation devised by Smith depends on the thorough removal of the diseased tissue and bone in the middle ear, attic, antrum and mastoid cavity without removal of the posterior bony canal wall, thereby effecting a complete dermatization of the middle ear with a solid postauricular union, as obtained after the simple mastoid operation. This is accomplished by first removing the diseased contents of the antrum and mastoid cavity. Then the opening from the mastoid antrum to the middle ear is enlarged by removal of some of the inner part of the bridge, just external to the incus. The bony canal wall is allowed to remain in its normal position. The posterior half of the membranous canal is separated from its bony attachment and held in place against the anterior canal wall. Through this opening, and the enlarged aditus, the contents of the middle ear and attic are removed. The posterior part of the membranous canal is then restored to its normal position and the middle ear allowed to dermatize, while the posterior wound heals completely with healthy granulation tissue.

Michigan State M. Soc. Journal, Grand Rapids

28: 281-352 (April) 1929

Treatment of Female Sterility. A. M. Campbell and J. D. Miller, Grand Rapids.—p. 281.
Value of Roentgen Ray in Obstetrics. H. S. Collisi, Grand Rapids.—p. 288.
Use of Wine in Roman Medicine According to Celsus. E. LeV. Crum, Iowa City.—p. 298.
Tuberculosis in Children: II. Pulmonary Tuberculosis. C. A. Ryan, Northville.—p. 307.
Early Diagnosis of Pulmonary Tuberculosis. E. R. Vanderslice, Lansing.—p. 318.
Multiple Birth of Monsters. V. W. Jensen, Shelby.—p. 319.
Value of Cholecystography in Diagnosis. C. E. Weaver, Detroit.—p. 320.
Quadruped Locomotion (Tetrapodisis) Among Human Children. S. Nittis, Ann Arbor.—p. 323.
Michigan's Department of Health. G. L Kiefer, Lansing—p. 326.

Military Surgeon, Washington, D. C.

64: 513-658 (April) 1929

Surgical Experience at Walter Reed General Hospital. H. P. Makel.—p. 513.
Spontaneous Pneumothorax. R. S. Loving.—p. 533.
Health Conditions in St. Croix. K. E. Lowman.—p. 539.
Ascent of Apo. L. L. Gardner.—p. 544.
Report on Fourth International Congress of Military Medicine and Pharmacy. W. S. Bainbridge.—p. 560. (Cont'd from p. 441.)
Memory of Walter Reed Hospital Foundation. M. Ashford.—p. 588.

Missouri State Med. Assoc. Journal, St. Louis

26: 165-206 (April) 1929

Diabetic Doctors. E. P. Joslin, Boston.—p. 165.
Epidemic Meningitis. A. Sophian, Kansas City.—p. 167.
Pericolic Adhesions. C. H. Shutt, St. Louis.—p. 172.
Disease of Lingual Tonsils. H. Foster, Kansas City.—p. 174.
*Rheumatic Heart Disease Treated with Small Vaccine: Two Cases. J. Zahorsky, St. Louis.—p. 176.
Solar and Lamp Therapy in Tuberculosis. R. L. Ehrlich, Koch.—p. 177.

Multiple Neurofibromatosis (von Recklinghausen's Disease) Affecting Posterior Root of Cervical Nerve with Pressure on Spinal Cord. E. Sachs, St. Louis.—p. 180.
Disseminated Miliary Tuberculosis with Jaundice: Anatomic Study. H. McCordock, St. Louis.—p. 183.

Rheumatic Heart Disease Treated with Small Vaccine.—Zahorsky reports two cases which he feels responded well to the use of Small's vaccine. He regards this as being a powerful therapeutic agent in the treatment of rheumatic disease.

Nebraska State M. Journal, Norfolk

14: 137-176 (April) 1929

Etiology of Gastric and Duodenal Ulcer. A. C. Ivy, Chicago.—p. 137.
Principles of Medical Diagnosis. J. Weingart, Des Moines, Iowa.—p. 141.
Fusospirochetal Infections of Lung. R. L. Haden, Kansas City, Kan.—p. 146.
Round Cell Infiltrations in Poliomyelitis and Encephalitis. N. A. Michels, Omaha.—p. 149.
Mechanical Principles Involved in Management of Purulent Pleuritis (Empyema). C. Emerson, Lincoln.—p. 152.
New System X-Ray Therapy. A. F. Tyler, Omaha.—p. 157.
Diagnostic Principles in Sexual Psychopathology. M. J. Breuer, Lincoln.—p. 159.
Syphilis of Lung: Case. M. C. Howard and B. C. Russum, Omaha.—p. 164.
Tetanus with Recovery. F. Clarke, Omaha.—p. 167.

New England J. of Medicine, Boston

200: 687-744 (April 4) 1929

Limitations of Roentgen Treatment of Skin Diseases. C. G. Lane, Boston.—p. 687.
*Treatment of Varicose Veins by Injection Method. E. A. Melkon, Boston.—p. 690.
Septic Bronchopulmonary Infections. R. Clifford, Boston.—p. 694.
Some Aspects of Physical Therapy. F. W. O'Brien, Boston.—p. 697.
Traumatic Rupture of Kidney and Spleen: Two Cases. H. Q. Horne, Haverhill, Mass.—p. 704.
*Eclampsia: Cause. S. Rushmore, Boston.—p. 707.
Health Education. T. D. Wood, New York.—p. 708.
Justification of Sliding Scale of Fees for Same Operation. D. W. Parker, Manchester, N. H.—p. 712.

Treatment of Varicose Veins by Injection Method.—It is Melkon's belief that the injection treatment of varicose veins is bound to take the lead over surgery because it is safe, easy to administer and less expensive, and the results are satisfactory. The technic must be thoroughly mastered, and good judgment must be used in choosing the vein for treatment. Melkon prefers to use a 20 to 40 per cent solution of sodium salicylate. She asserts that about 80 per cent of her patients have given a family history of varicose veins.

Cause of Eclampsia.—The following theory is advanced by Rushmore: Eclampsia is due to a calcium deficiency on the part of the mother, owing to the activity of the fetus. In eclampsia, the deficiency affects primarily the liver. Calcium insufficiency in the liver gives increased permeability of liver cells, with interference with their function of carbohydrate metabolism, and, histologically, results in fatty degeneration, or infiltration. If the interference is severe, necrosis of liver cells results, together with the casting into the blood stream of liver protein, which is toxic, and may give symptoms of anaphylactic shock. The liver protein is different from serum albumin and is therefore eliminated by the kidneys, giving the marked albuminuria sometimes found. The severe interference with liver function gives relative hypoglycemia with convulsions and changes secondary to convulsions in the brain and liver especially. The theory explains the time of occurrence of eclampsia (late in pregnancy when the fetus is most active in taking calcium from the maternal organism); the prevention by modern prenatal care, which includes free use of milk (lime) for the pregnant woman and alkaline treatment (which often includes lime); the albuminuria, which is often marked, suggesting marked kidney disease, but without previous renal disturbance, and often followed by complete recovery of the kidneys (by all functional and sedimentary tests); the occurrence of convulsions; the beneficial effect of treatment with dextrose solutions; the benefit of delivery and the death of the fetus; the occurrence of convulsions for a short time after the death of the fetus and after delivery; the similarity of some cases to anaphylactic shock. Recovery after extensive liver injury is due to the recuperative power of the liver.

New Orleans Medical and Surgical Journal

81: 681-768 (April) 1929

Genital Tuberculosis. H. C. Bumpus, Jr., and G. J. Thompson, Rochester, Minn.—p. 681.
Common Disorders of Colon Observed in Treatment of Chronic Invalid. E. L. Eggleston, Battle Creek, Mich.—p. 686.
Training Health Workers. M. C. Balfour, Indianola, Miss.—p. 694.
Some Essentials in Dental Health Program. W. R. Wright, Meridian, Miss.—p. 703.
Hypertrophic Pulmonary Osteo-Arthropathy. L. J. Williams, Baton Rouge, La.—p. 708.
Pneumonia. C. Jamison, New Orleans.—p. 710.
Treatment of Pleural Effusion, Including Empyema, by Evacuation and Air Replacement: Twelve Cases. J. A. Danna, New Orleans.—p. 713.
Cleft Palate: When and How It Should Be Treated. E. D. Fenner, New Orleans.—p. 718.
Tularemia: Cases. W. S. Kerlin, Shreveport, La.—p. 723.
Sedimentation Rate of Erythrocytes. E. H. Lawson, New Orleans.—p. 727.
Hysterical Hiccups with Associated Phenomena. W. J. Otis, New Orleans.—p. 731.
Bacteriologic Study of Gram-Negative Bacilli Found in Fifty Cases of Infection of Urinary Tract. H. J. Gondolf and M. S. Stringer, New Orleans.—p. 735.
Antigens and Precipitation Test. H. W. Butler, New Orleans.—p. 742.

New York State J. Medicine, New York

29: 373-432 (April 1) 1929

What Every Member of Medical, Dental and Nursing Professions Should Know About Cancer, So They Can Aid in Its Control. J. C. Bloodgood, Baltimore.—p. 373.
Sterility. I. C. Rubin, New York.—p. 379.
Less Well Recognized Symptoms of Prostatic Obstruction. A. L. Chute, Boston.—p. 387.
Value of Grievance Committee as Part of State Medical Practice Act. O. S. Wightman, New York.—p. 391.
Workmen's Compensation Law. J. N. Vander Veer, Albany, N. Y.—p. 395.

Occupational Therapy and Rehabilitation, Baltimore

8: 73-151 (April) 1929

Program of Occupational Therapy at National Home for Disabled Volunteer Soldiers. J. A. Mattison, National Soldiers Home, Calif.—p. 77.
Occupational Therapy Treatment for Group of Spastic Cases; Children Under Twelve Years of Age. S. A. Paisley, Los Angeles.—p. 83.
Occupational Therapy in Tuberculosis Sanatorium. C. Bush, Livermore, Calif.—p. 95.
Occupational Therapy at Walter Reed General Hospital: Patient's Viewpoint. S. Rubin.—p. 105.
Special Problems of So-Called Chronic Homebound Patient. E. P. Finley, Cleveland.—p. 113.
Some Recent Surveys. M. E. Shanklin, San Francisco.—p. 123.

Ohio State M. Journal, Columbus

25: 265-328 (April 1) 1929

Tumors of Central Nervous System: Histologic Study. E. C. Cutler, A. R. Moritz and R. M. Zollinger, Cleveland.—p. 269.
Diabetes Mellitus: Treatment from Pathologic Standpoint. C. A. LaMont, Canton.—p. 277.
Present Status of Goiter Prophylaxis. R. Olesen, Cincinnati.—p. 281.
Acute Retropharyngeal Abscess. L. Ginsburg, Toledo.—p. 284.
Surgical Treatment of Pulmonary Tuberculosis. S. O. Freedlander, Cleveland.—p. 286.

Physical Therapeutics, New York

47: 215-266 (April) 1929

Raynaud's Phenomenon Treated by Physical Measures. C. R. Brooke, Newark, N. J.—p. 215.
Physical Treatment in Constipation. G. J. Ott, Boston.—p. 225.
Hydrostatic Electrode. L. A. Hadley, Syracuse, N. Y.—p. 235.
Coordinating Physical Therapy in Hospital. S. T. Snedecor, Hackensack, N. J.—p. 239.
Direct Current: Factors Essential to Therapeutic Appreciation. J. E. G. Waddington, Detroit.—p. 247.

Public Health Reports, Washington, D. C.

44: 763-864 (April 5) 1929

Age Incidence of Common Communicable Diseases of Children. S. D. Collins.—p. 763.
Prevalence of Communicable Diseases in United States, February 3 to March 2, 1929.—p. 826.

Radiology, St. Paul

12: 275-368 (April) 1929

Comparative Measurements of Quality of Roentgen Rays. J. J. Burby, Madison, Wis., and M. W. Barry, Omaha.—p. 275.
Quality Average of Continuous Roentgen Spectrum. A. Mutscheller, New York.—p. 283.
Cathode Ray Dosimetry. L. S. Taylor, Washington, D. C.—p. 294.
Physical Factors in Radiation Therapy and Clinical Application. J. L. Weatherwax and B. P. Widmann, Philadelphia.—p. 297.
Skin Toleration Doses in Roentgen Units and Relation to Quality of Radiation. P. M. Hickey, Ann Arbor, Mich., and E. A. Pohle, Madison, Wis.—p. 309.

Reliability of r-Unit for Measurement of Roentgen and Radium Radiation. O. Glasser and U. V. Portmann, Cleveland.—p. 317.
Measurement and Specification of Radiant Energy. H. Laurens and H. S. Mayerson, New Orleans.—p. 328.
Roentgen Diagnosis in Gynecology. I. F. Stein and R. A. Arens, Chicago.—p. 341.
Fractures of Pelvis. W. H. Gilmore, Chicago.—p. 345.
Relationship of Gastric Ulcer to Gastric Carcinoma: Case. M. R. Hoon and J. D. Garvin, Pittsburgh.—p. 358.

Rhode Island M. Journal, Providence

12: 49-66 (April) 1929

Neurologic Contacts with Other Branches of Medicine. H. B. Sanborn, Providence.—p. 49.
Clearing Tuberculous Lesions from Lungs. H. L. Barnes, Wallum Lake.—p. 55.
Treatment of Urinary Obstruction in Childhood. W. E. Ladd, Boston.—p. 61.

Southern Medical Journal, Birmingham

22: 303-416 (April) 1929

Influence of Pyogenic and Tuberculous Infections on Epiphyseal Activity and Growth of Bone. A. Cotton, Baltimore.—p. 303.
*Study of School Children for Tuberculosis. P. P. McCain, Sanatorium, N. C.—p. 310.
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*Carbuncle of Kidney. T. D. Moore, Memphis, Tenn.—p. 338.
Modified Technic for Staining Intercalated Disks of Heart Muscle. J. E. Wood, Jr., and R. L. King, University, Va.—p. 345.
Diverticula of Duodenum. C. H. Heacock, Memphis, Tenn.—p. 348.
Chorea. B. R. Tucker, Richmond, Va.—p. 351.
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Control of Malaria as Part of Full-Time County Health Department Program. F. J. Underwood, Jackson, Miss.—p. 357.
*Résumé of Studies on Plasmochin. W. Krauss, Memphis, Tenn.—p. 359.
*Sodium Cacodylate in Treatment of Pernicious Malaria. E. E. Murphey, Augusta, Ga.—p. 363.
Differences in Habits of Anophelines Which Transmit Malaria in America, in Europe and in Far East. L. W. Hackett, New York.—p. 367.
Recent Progress in Malaria Eradication. F. L. Hoffman, Wellesley Hills, Mass.—p. 371.
*New Method for Mechanical Distribution of Paris Green as an Anopheline Larvicide. J. A. LePrince and H. A. Johnson, Memphis, Tenn.—p. 372.
Mississippi Law and Program for Salt Marsh Mosquito Control. T. H. D. Griffitts, Biloxi, Miss.—p. 374.
Prevalence of Malaria in Humphreys and Sunflower Counties, Mississippi, in 1927-1928. P. S. Carley, Belzoni, Miss., and M. C. Balfour, New York.—p. 377.
*Observations on Malaria Problem of West Tennessee. H. E. Meleney and E. L. Bishop, Nashville, Tenn., and F. L. Roberts, Trenton, Tenn.—p. 382.
Mosquito Control in Lake County, Tennessee: County-Wide Screening Program. H. R. Fullerton, Nashville, Tenn.—p. 395.
Oil Mixtures and Oil Equipment for Anopheline Larvae Control of Impounded Areas. L. M. Clarkson, Atlanta, Ga.—p. 397.
Practical Application of Paris Green as Larvicide for Anopheles Larvae on Impounded Lake in Alabama. D. G. Gill and C. C. Kiker, Montgomery, Ala., and L. C. Sims, Birmingham, Ala.—p. 399.
Malaria Control Activities in Arkansas, 1927-1928. M. Z. Bair, Little Rock, Ark.—p. 404
Malaria in Florida, 1928 E. L. Filby, Jacksonville, Fla.—p. 405.
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Malaria Work in Kentucky, 1928. A. T. McCormack, Louisville, Ky.—p. 405.
Malaria Work in Louisiana, 1928. O. Dowling, New Orleans.—p. 406.
Malaria Control Operations in State of Mississippi During 1928. F. J. Underwood, Jackson, Miss.—p. 406.
Malaria Work in Missouri, 1928. W. S. Petty, Caruthersville, Mo.—p. 408.
Malaria Activities in North Carolina. C. O'H. Laughinghouse, Raleigh, N. C.—p. 408.
Malaria Report for South Carolina, 1928. R. G. Hamilton, Columbia, S. C.—p. 410.
Progress Report of Malaria Control in Tennessee in 1928. E. L. Bishop, Nashville, Tenn.—p. 410.
Malaria Control in Virginia. H. G. Grant, Richmond, Va.—p. 411.

Study of School Children for Tuberculosis.—The extension department of the North Carolina Sanatorium has devoted a large part of its time during the school sessions of the last two years to a study of tuberculosis among school children. It works in cooperation with the local health and school authorities. The local authorities do the necessary preliminary work, furnish the nurses, pay for the roentgenograms, secure the use of a local roentgen-ray machine and do the necessary follow-up work. The sanatorium furnishes an expert clinician, provides all necessary literature, charts and forms, makes and interprets the roentgenogram, correlates the observations and makes recommendations in each individual case. McCain reports that of 25,047 children examined, 22.59 per cent showed a positive tuberculin reaction; 1.79 per cent of the total number tested, or 7.62 per cent of the positive reactors, were diagnosed as having demonstrable tuberculosis. The colored children showed a higher proportion of tuberculin reactions—27.41 per cent as compared with 22.07 per cent for white children—and also a higher incidence of demonstrable tuberculosis—3.21 per cent of the total number tested as compared with 1.53 per cent for the white children.

Carbuncle of Kidney.—The detailed results of a study of thirty-one collected cases are presented by Moore, and two additional cases are reported. The chief clinical features of the disease are: (*a*) the recent history of a suppurative lesion, such as a furuncle or carbuncle; (*b*) the appearance of dull pain in the region of the affected kidney, associated with tenderness in the costovertebral angle, fever and sweats (rigors may or may not occur), and (*c*) a practically negative urinalysis, moderate leukocytosis and a positive culture of *Staphylococcus aureus* from the affected kidney, the function of which may be moderately diminished. Cases in which the carbuncle occupies the upper pole of the kidney may display practically no localizing symptoms. The pathologic features of renal carbuncle are well defined. Surgical intervention is usually imperative, nephrectomy being the treatment of choice. In cases complicated by perinephric abscess, preliminary drainage is desirable prior to nephrectomy.

Prophylaxis of Respiratory Diseases with Vaccines.—Adams relates his experience with vaccines as a prophylactic measure against respiratory infections. Of 382 patients given preventive vaccine treatment for colds, 68 per cent were apparently benefited. The two groups were of apparently equal susceptibility; 30 per cent of the vaccinated group lost time from respiratory disease while 49 per cent of the nonvaccinated lost time. The percentage of improvement was ten points higher when there was no reaction to the vaccine. It is probable that the degree of natural immunity governed the extent of the reaction, and that the persons with a negative reaction had a higher degree of immunity than those that reacted. Pathologic conditions of the nose and throat did not affect the results, except that patients with tonsillar disease showed a definitely lower rate of improvement than the whole group. Patients taking less than the full number of doses showed a lost time rate equal to that of the whole group, the rate decreasing with the number of doses taken. None of the vaccinated group had pneumonia.

Studies on Plasmochin.—Krauss asserts that it has been abundantly shown that plasmochin is a complete substitute for quinine in the treatment of the benign malarias and that gametes of both species rarely resist plasmochin longer than five days if it is given in full doses: that is, 0.1 Gm. daily in single doses of 0.02 Gm. The relapse experience has not been bettered.

Sodium Cacodylate in Treatment of Pernicious Malaria.—Murphey is firmly convinced of the efficacy of sodium cacodylate in the treatment of malaria. He says that in proper dosage it will clear the blood stream of malarial parasites and cause a cessation of all symptoms. It will by itself permanently cure malarial fever. To attain the results described, from 20 to 30 grains (1.3 to 2 Gm.) should be administered in each twenty-four hours. It is less toxic when administered intravenously than quinine; more efficient than arsphenamine, and less apt to produce a rash than acetarsone.

Distribution of Paris Green as an Anopheline: New Method.—Between the hand method for small areas and the airplane method for large tracts there has arisen a demand for a dusting device that would be mobile, economical, easily operated and effective over areas not covered by the other methods. With an idea that such a device could be most advantageously operated from a light boat, LePrince and Johnson have developed a power duster. A boat of the skiff type, 14 feet by 50 inches, was procured, propelled by a small outboard motor. The blowing equipment consisted of a 600 watt gasoline engine generator unit and a 100 watt electric driven hand blower. A hopper was installed with an agitator similar to that of the well known flour sifter. This sifted the dust by hand power

into the intake pipe of the blower. The dusting outfit proper weighed less than an average sized man and could be carried on the running board of a car. It sits in the boat on spring legs and does not have to be bolted to the boat. Thus it can be easily moved from pond to pond. In operation from 5 to 15 per cent of paris green mixed with ordinary hydrated lime was blown diagonally into the air as the boat moved along. Six or 10 feet after leaving the nozzle it was picked up by air current and floated across the area. The distribution was excellent and no heavy, dense coverage of dust occurred near the boat. It is believed that the lightness of hydrated lime was partly responsible for the effective distances covered. The passage of the dust through the fan of the blower materially aids in the diffusion. In a series of tests of this device, the authors were consistently able to kill all *Anopheles* larvae up to 450 feet from the boat. The time of application was less than five minutes per acre. One-half pound of paris green per acre was found sufficient at this place. The cost of materials (with paris green at 20 cents a pound) was therefore approximately 14 cents an acre. The whole outfit can be operated by one man.

Observations on Malaria Problem of West Tennessee.—A study of the malaria problem of West Tennessee, made in Lake, Obion, Dyer and Lauderdale counties during the summer of 1928 by Meleney et al., showed a heavy incidence of malaria in the region which lies in the Mississippi River bottom and along the lower portions of tributary streams. Lake and Dyer counties showed the heaviest incidence. Adults of *Anopheles quadrimaculatus* were found almost everywhere in the area studied. Breeding was found in varying amounts in regions subject to overflow, and in some hilly regions, but was, in general, more difficult to demonstrate than was the presence of adults. Mosquito-proofing of houses is suggested as the measure most likely to produce prompt results. Where drainage is feasible, it should also be undertaken. Twenty per cent of the positive blood specimens found in this study contained *Plasmodium falciparum*. Fifteen species of mosquitoes were collected during this study.

Southwestern Medicine, Phoenix, Ariz.

13: 105-152 (March) 1929

*Red Blood Cell Sedimentation Test in Treatment of Pulmonary Tuberculosis. J. W. Tappan and G. H. Faget, Fort Stanton, New Mexico.—p. 105.
Historical Survey of Influenza. C. Awe, El Paso, Texas.—p. 112.
Bacteriology and Pathology of Influenza. G. Turner, El Paso, Texas.—p. 113.
Clinical Discussion and Treatment of Influenza. G. Werley, El Paso, Texas.—p. 115.
Nasal Accessory Sinuses in Influenza. S. A. Schuster and F. P. Schuster, El Paso, Texas.—p. 116.
Simultaneous Perforation of Multiple Tuberculous Ulcers of Intestines. E. W. Phillips and E. P. Palmer, Phoenix, Ariz.—p. 118.
Epidemic Cerebral Meningitis. R. B. Raney, Phoenix, Ariz.—p. 122.

Red Blood Cell Sedimentation Test in Treating Pulmonary Tuberculosis.—Tappan and Faget report the results of 378 sedimentation tests made on 234 patients with pulmonary tuberculosis. They found it to be a measure of tissue destruction. The sedimentation velocity is proportional to the anatomic involvement, being most marked in far advanced and least marked in minimal cases. As an index of activity it is more rapid in patients with positive sputum, loss of weight, high pulse rate and temperature and active disease than vice versa. In fibroid types of pulmonary tuberculosis, the sedimentation time approaches the normal. In the exudative types it is often very fast. A persistently rapid sedimentation reaction in pulmonary tuberculosis indicates a poor prognosis, especially if it is constantly below thirty minutes. All patients subjected to this test who have died of pulmonary tuberculosis had a red blood sedimentation time of one hour or less. More than 75 per cent of these had a sedimentation time which was within the first thirty minutes. The latter is therefore within the danger zone. Patients who are in this group should be kept strictly in bed until their sedimentation time has risen beyond the markedly active line (two hours). A falling sedimentation rate is a danger signal and it often reveals renewed activity long before such symptoms as fatigue, loss of weight, acceleration of the pulse rate, rise in temperature, increased expectoration, or changes in physical and roentgen examination do so. In prescribing exercise the blood sedimentation rate is an important factor to consider. Repeated tests will give due warning in those patients who are not doing well on exercise. In patients doing well on exercise the figures should approach normal.

West Virginia M. Journal, Charleston

25: 193-256 (April) 1929

Common Problems in Management of Sick Infant. F. E. Baxter, Chicago.—p. 193.
Newer Aspects of Rickets. T. M. Barber, Charleston.—p. 199.
Obstetric Emergencies. E. Speidel, Louisville, Ky.—p. 201.
Review of 100 Cases Presented for Gastro-Intestinal Study. J. H. Baber, Huntington.—p. 205.
Necessity for Early Diagnosis of Cardiac Disease. M. C. Borman, Montgomery.—p. 208.
Acidosis. H. A. Walkup, Mount Hope.—p. 210.
Blood Pressure Changes During Heart Failure. L. T. Gager, Washington, D. C.—p. 214.
Modern Conception of Diagnosis and Treatment of Early Syphilis. F. F. Sowers, Fairmont.—p. 217.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

1: 629-670 (April 6) 1929

Debilitated Child. C. W. Vining.—p. 629.
*Undulant Fever: Six Cases. P. Manson-Bahr and H. Willoughby.—p. 633.
*Improved Diffraction Method for Diagnosing and Following Course of Pernicious and Other Anemias. A. Pijper.—p. 635.
*Liver Treatment of Pernicious Anemia. G. W. T. H. Fleming.—p. 638.
*Jejunal Ulcer Associated with Testicular Pain. A. C. Hampson.—p. 640.
Traumatic Fat Necrosis of Breast. P. J. Moir.—p. 640.
Severe Hemorrhage from Rupture of Corpus Luteum Cyst. D. Levi.—p. 641.
Treatment of Middle Ear Suppuration. H. B. Shaheen.—p. 643.
Slipped Epiphysis of Head of Femur. J. J. Robb.—p. 643.
Carcinoma of Lower End of Ileum. J. M. Black.—p. 644.
Pregnancy Associated with Diabetes Mellitus. M. G. Dill and A. V. Dill.—p. 644.

Undulant Fever.—The six cases reported by Manson-Bahr and Willoughby show clearly the almost universal distribution of undulant fever, for the cases came from India, East Africa, Peru and England. As regards the initial diagnosis, typhoid was recorded in four cases, malaria in one, and influenza in the sixth. Splenomegaly of a considerable degree was present in every case, and should be considered a prominent factor in determining the diagnosis. The intradermal "melitene" reaction of Burnet was tried in three instances and proved to be successful. The skin reaction remained visible for forty-eight hours. The agglutination test with dead emulsions of *Brucella melitensis* (Mediterranean strain) proved of diagnostic value in every case when performed by the macroscopic method. On each occasion the initial diagnosis was made by this test on Garrow's agglutinometer, which proved to be as reliable as the tube method, and much more expeditious.

Improved Diffraction Method for Use in Pernicious and Other Anemias.—The principle of this method is stated by Pijper to be as follows: When a beam of white light is sent through a blood smear it is broken up (diffracted) by the blood cells into the spectral colors. From the distribution of the colors the mean diameter, the degree and quality of anisocytosis, and the degree of poikilocytosis of the red cells can be determined. "Diffraction method" and "diffraction micrometer" are suggested as suitable names.

Liver Treatment of Pernicious Anemia. — Fleming reports a case of pernicious anemia treated with liver which showed an abolition of the marked shift to the right of the polymorphonuclear count as the total blood picture returned to normal. When liver treatment ceased, the polymorphonuclear count moved over to the right again, to be brought back by more liver treatment.

Jejunal Ulcer Associated with Testicular Pain.—Hampson's patient was buried by a shell. He apparently suffered a concussion, and immediately afterward the thyroid was seen to be much enlarged; it gradually became smaller. Shortly after the concussion he began to have attacks of epigastric pain, associated with hunger, about half an hour after meals, and tenderness in the epigastrium to the right of the midline. At the beginning the attacks lasted about a week,

pain appearing after every meal during this time; there were intervals of two or three months during which he was entirely free from symptoms. The attacks were especially severe during the winter and were usually accompanied by enlargement of the thyroid. They gradually became more frequent and of longer duration. Four years later, in July, 1919, an operation was performed for perforated duodenal ulcer. The patient remained well for about two years, after which the symptoms appeared again more acutely, and the pain and tenderness extended across the epigastrium. A gastrojejunostomy was performed. Six months later he again had symptoms, but they were not so acute as before the operation; they came on particularly when the weather was cold. The pain became gradually longer in duration, increasing in intensity during the day independently of meals, and was not now relieved by food. In August, 1926, he first felt a dull aching pain in the testes at the end of the day, when the epigastric pain was most acute. A suspensory bandage gave little relief. Gradually the pain in the testes became greater, and appeared earlier in the day, together with pain in the loins. He never had these symptoms except when the epigastric pain was present, and there was no abnormality in micturition. There was general tenderness in the upper part of the abdomen, especially at a point immediately above and to the left of the umbilicus, where a small lump could be felt. It seemed to be fixed to the deeper tissues, and moved with the pulsations of the aorta. Pressure on the lump reproduced the pain in the back and in the testes. The testes themselves were tender, and there was slight hyperalgesia in the loins. A roentgen examination with a barium meal showed a jejunal ulcer in the situation of the tumor. The patient was confined to bed, and treated medically on a strict diet. The pain was rapidly relieved and the tumor gradually disappeared. Since then he has remained on a modified diet, and has stopped smoking. He has remained free from symptoms. The two main points of interest in this case are the association of thyroid enlargement with attacks of epigastric discomfort due to duodenal ulcer, and the pain in the testes and the loins.

Lancet, London

1: 751-804 (April 13) 1929

Polyuria in Chronic Nephritis. E. B. Verney.—p. 751.
*Administration of Insulin in Suspension. O. Leyton.—p. 756.
*Pulmonary Neoplasms: Twenty-Six Cases. T. C. Hunt.—p. 759.
*Polycythemia Vera with Phenylhydrazine Hydrochloride. W. Mackay.—p. 762.
*Pituitary Cachexia in Tabes Dorsalis. T. S. Good and K. O. Newman.—p. 765.
Digestive Enzymes of Human Fetus. M. F. L. Keene and E. E. Hewer.—p. 767.
Banisterine or Harmine. J. A. Gunn.—p. 769.
Preservation of Anesthetic Ether. C. L. Hewer.—p. 770.
Inhibitory Effect of Staphylococcus Antivirus in Relation to *p*H of Medium. R. F. Hunwicke.—p. 771.

Administration of Insulin in Suspension.—Leyton relates his experiences with the subcutaneous injection of insulin suspended in castor oil. He asserts that it will lead to a greater number of recoveries from diabetes mellitus. In his experience recovery has occurred only in those patients who month after month have kept the concentration of sugar in their blood continuously below 0.15 per cent. The prolonged action of the suspension will make this much less difficult.

Pulmonary Neoplasms.—Twenty-six cases of pulmonary carcinoma are described by Hunt, twenty-one being histologically of the oat cell type. No distinction could be made clinically between the oat cell type and lung tumors of the polygonal, columnar or squamous cell type. The ratio of men to women affected was, approximately, 3 to 1. A somewhat marked incidence of previous lung involvement, especially influenza and bronchitis, was found. No connection between the incidence of the growths and previous occupations could be traced. Especially common modes of onset were (1) with pain in the chest alone; (2) with an acute febrile attack of "influenza" followed by a temporary return to work. Early pressure signs were frequent, and should not necessarily suggest mediastinal tumor rather than a pulmonary growth. The average age of the patients was 50, and the duration of the disease (from the first symptom to death) was six months. Hemoptysis and pleural effusion occurred in 48 per cent of these patients. The position of the heart's apex was variable and was unaltered in 40 per cent. Metastases were not a frequent cause of symptoms.

Polycythemia Vera with Phenylhydrazine Hydrochloride.—Experience with two cases has convinced Mackay that phenylhydrazine given by mouth is an effective agent in bringing about destruction of red cells. While the beneficial action is only temporary, its use in the treatment of polycythemia vera is justified by the feeling of well being and the freedom from symptoms which it produces, always provided that its exhibition is controlled by frequent blood counts, and that it is discontinued when the number of red cells reaches the neighborhood of 4.5 millions. While as yet there is no definite contraindication, Mackay says it must always be remembered that phenylhydrazine hydrochloride is a protoplasmic poison, and should be used with care and respect.

Pituitary Cachexia in Tabes Dorsalis.—The case of tabes dorsalis reported by Good and Newman showed a fairly typical course. Within about three months of the patient's death rapid emaciation set in, which was accounted for at the postmortem examination by a fibrous atrophy of the anterior lobe of the pituitary gland (Simmonds' disease)

Annales de l'Institut Pasteur, Paris

43: 279-398 (March) 1929

Variability of Characteristics of Species in Dermatophytes. R. Biltris.—p. 281.
Autolysis and Hereditary Factors in Bacteriophagy. E. Wollman.—p. 359.
*Experimental Study of Herpetic Virus. A. Urbain and W. Schaeffer.—p. 369.
Zinc Content in Vegetable Food. G. Bertrand and B. Benzon.—p. 386.
Early Clinical Signs of Primary Tuberculous Infection. O. Scheel.—p. 394.

Experimental Study of Herpetic Virus.—Urbain and Schaeffer found that birds (hens, sparrows and guinea-fowls) were refractory to the herpetic virus. Dogs, cats, rabbits and guinea-pigs died from herpetic encephalitis a few days after they had been given intraspinal or intracerebral inoculations with herpetic virus. A local, herpetic, vesicular eruption was observed in guinea-pigs after intracorneal, intradermic or subcutaneous inoculations, and in eleven of the thirty-three guinea-pigs that were inoculated under the skin, the local eruption was complicated by paraplegia and paralysis of the sphincters. At necropsy the virus was found in the brain, in the spinal cord, in the suprarenals and also in the cerebrospinal fluid, the urine, the saliva and the feces. Permanent immunity was obtained in only one of the ten rabbits by repeated intraspinal inoculations with small doses of herpetic virus that had been attenuated with formaldehyde. The other methods of immunization did not confer permanent immunity.

Annales de Maladies Vénériennes, Paris

24: 161-240 (March) 1929

*Syphilis Without Chancre After Blood Transfusion. E. Constantinescou and N. Vatamanu.—p. 161.
Syphilis of Rabbit's Eye. P. Grigorieff and K. Jarycheff.—p. 166.
Hereditary Spirochetosis: Effect of Congenital Syphilis on Pilar System of Rabbits. R. Barthélemy.—p. 189.

Syphilis Without Chancre After Blood Transfusion.—Constantinescou and Vatamanu report a case of generalized papular and erosive syphilitic skin eruption and tonsillar and vulvar syphilids in a woman, aged 42. The eruption was not preceded by a chancre and appeared seventy-five days after a blood transfusion which the patient had had for acute anemia caused by metrorrhagia. The Wassermann reaction of the donor's blood was positive, and the donor had had a mixed chancre at the time of the transfusion, but he did not know that the condition was syphilitic. The husband of the woman did not have syphilis.

Bull. et Mém. de la Soc. Méd. des Hôpitaux de Paris

53: 371-415 (March 25) 1929

Multiple Chondromatosis. J. Huber and W. Advenier.—p. 371.
*Malignant Endo-Aortitis Lenta. A. Clerc and Bascourret.—p. 385.
Relation Between Tuberculosis and Raynaud's Disease. L. Bernard and L. Pellissier.—p. 393.
Icterohemorrhagic Spirochetosis. Dargein and Bideau.—p. 403.
New Method of Functional Examination of Lungs: Manometric Measurement of Chest. G. Laniez.—p. 409.
Combined Nickel or Cobalt and Insulin Therapy in Diabetes Mellitus. Roch and A. Du Bois.—p. 412.

Malignant Endo-Aortitis Lenta.—Clerc and Bascourret report a case of malignant endo-aortitis lenta in a man, aged 24.

The diagnosis was made post mortem. The patient had had syphilis (the Wassermann reaction later became negative) and gave a history of rheumatoid pains. For four months the symptoms of endocarditis lenta were observed: irregular fever, dyspnea, double aortic murmur at the base of the heart, arthralgia, splenomegalia, anemia and cachexia. The blood cultures were negative. A few days before the sudden death, signs of an aneurysm of the aortic arch appeared, followed rapidly by exudative pericarditis. At necropsy some old sclerous lesions were found on the aortic valves together with three areas of ulcerovegetative endo-arteritis in the aorta, a few centimeters from the cardiac orifice. In one of the areas the distended wall of the aorta formed an aneurysm, the size of an egg, which communicated, through a small perforation, with the pericardium. A few gram-positive cocci were found in the vegetations. The authors think that the case is interesting because of the rarity of primary localization of the infection in the aorta.

Bulletins et Mém. de la Soc. Nat. de Chirurgie, Paris

55: 331-377 (March 9) 1929

Whitman's Treatment of Fractures of Neck of Femur. Boppe and Vassitch.—p. 337.
*Intestinal Obstruction from Gallstones. G. Baillat.—p. 346.
*Plaster Cast with Provision for Early Mobilization. Ducroquet.—p. 350.
Thoracoplasty in Pulmonary Tuberculosis. R. Proust, A. Maurer and J. Rolland.—p. 355.
*Splenectomy in Congenital Hemolytic Icterus. H. Gaudier and C. Gernez.—p. 374.

Intestinal Obstruction from Gallstones.—Baillat reports a case of complete intestinal obstruction caused by two gallstones in a woman, aged 68, and insists on the importance of a thorough evacuation at laparotomy of the part of the intestine that is above the site of the obstruction; this may be accomplished by pressing out the contents of this part of the intestine through the intestinal incision (if incision of the intestine is necessary during the operation); by aspiration of the intestinal contents through a puncture (if the intestine is not to be opened), or even by the fistulization of the intestine. The author explains the rapid death (in nine hours) in the case reported by him on the basis of an intoxication due to incomplete evacuation of the part of the intestine above the site of the obstruction, and thinks that systematic complete evacuation of the intestine at the laparotomy, together with systematic postoperative administration of hypertonic salt solution, may considerably ameliorate the prognosis in intestinal obstructions.

New Technic of Plaster Cast Application.—Ducroquet developed a new technic of plaster cast application, which he used in 100 orthopedic cases, mostly in congenital dislocations of the femur, in genu valgum or genu varum and in various kinds of ankylosis. The plaster cast applied for the immobilization of an extremity in a required position is not modeled exactly on the extremity but is provided with some room for an early gradual mobilization or for some additional corrections of the position without the interruption of the immobilization and without changing the plaster cast for another one. For this purpose, a wedge-shaped cotton or floss pad is inserted into the plaster cast; the pad may be removed after the plaster has hardened. Thus, in genu valgum, for instance, the plaster bandages are laid over a wedge-shaped cotton pad the length and width of the leg, fixed to the internal aspect of the leg by means of gauze bandages, with its apex at the knee level and its base at the malleolus. After the plaster has hardened, the cotton is withdrawn from the plaster cast, leaving a wedge-shaped space. Once a week a wad of cotton is put into the cast on the outer side of the leg so as to displace the leg inward, and usually by the end of the third month the correction of the position is completed. In congenital dislocations of the femur, the pad is placed on the anterior aspect of the femur, with the top directed proximally, and in the other cases the position and the size of the pad are changed according to the requirements of the case.

Splenectomy in Congenital Hemolytic Icterus.—Gaudier and Gernez report a case of congenital hemolytic icterus in a young man, aged 20, which was rapidly cured by splenectomy. The icterus was first observed the day after birth. During the year preceding the operation the patient had complained of attacks of dyspnea on exertion and of pains in the epigastrium and in the flanks, sometimes with an increase of the icterus. The spleen measured 31 by 19 cm. and reached down to the umbilicus; the liver was two fingerbreadths below the ribs; both spleen and liver, with the gallbladder, were slightly painful on pressure. Blood examination showed: hemoglobin, 60 per cent; erythrocytes 3,260,000, with 11 per cent of granular and 3 per cent nucleated cells, and leukocytes, 19,200. The icterus disappeared a few days after the splenectomy. In one month the hemoglobin increased to 90 and the erythrocytes to 4,650,000; the nucleated cells disappeared and the leukocyte count was 7,200. The attacks of pain were no longer observed, and the patient's general condition improved greatly.

Gynécologie et Obstétrique, Paris

19: 81-159 (Feb.) 1929

Rhabdomyosarcoma and Cylindric Epithelioma of Corpus Uteri. Reeb and C. Oberling.—p. 81.
*Forcible Delivery Under Spinal Anesthesia. P. Balard and R. Mahon. —p. 91.
*Rôle of Syphilis in Etiology of Albuminuria of Pregnancy. M. Rivière. —p. 100.
Bone Deformities in Exencephalic, Anencephalic and Pseudencephalic Monsters. H. Sloboziano, A. Georgesco and P. Herscovici.—p. 124.

Forcible Delivery Under Spinal Anesthesia (Delmas Method).—Balard and Mahon report six cases of forcible delivery under spinal anesthesia in patients with various indications for an intervention (contracted pelvis, central placenta praevia, toxic condition and prolapse of the cord). The cervix was lacerated at the delivery in all cases and in three of the cases the laceration of the cervix was complete and the vaginal culdesac was also involved; internal version was difficult in the cases in which the membranes were ruptured before the intervention. Therefore the authors think that the use of the Delmas method should be limited to the cases in which cesarean section and induction of labor are contraindicated.

Rôle of Syphilis in Etiology of Albuminuria in Pregnancy.—Rivière reports twenty-five cases of albuminuria in pregnant women with a positive Wassermann reaction. Acute nephritis was found in one case, chronic nephritis in four cases, and albuminuria without nephritis in twenty cases. Fourteen more cases of albuminuria were observed by the author in sixty-six women with a positive Wassermann reaction, whereas in only forty-seven of 2,295 pregnant women, who had no albuminuria, was the Wassermann reaction found positive (syphilis in 2.004 per cent of pregnant women without albuminuria as compared with syphilis in 23 per cent of pregnant women with albuminuria).

Journal de Chirurgie, Paris

33: 145-288 (Feb.) 1929

*Median Abdominal Incision in Gallbladder Operations. A. Gosset and R. Soupault.—p. 145.
Congenital Dilatation of Common Bile Duct. J. Sénèque and A. Tailhefer.—p. 154.
*Supra-Umbilical Laparotomy in Intestinal Intussusception in Infants. M. Fèvre.—p. 179.

Median Abdominal Incision in Gallbladder Operations.—On the basis of several hundred gallbladder operations performed by them, Gosset and Soupault discuss the advantages of the median abdominal incision for cholecystectomy or drainage of the gallbladder. (For cholecystotomy or for operations on the liver they use a paramedian incision.) The median abdominal incision gives good and rapid exposure of the biliary tract, because the common bile duct, the cystic duct and the neck of the gallbladder are situated only 3 cm. to the right of the linea alba, and because all the subhepatic organs are shifted toward the median line in the lordotic position of the patient during the operation. The exposure is increased by the retraction of the right side of the incised abdominal wall by one assistant, placed at the right shoulder of the patient, and by another assistant who, with his left hand, pushes the intestines as far as possible from the operative field. The incision is started at the xiphoid process and may be prolonged downward as far as is necessary. In some cases (fat abdomen, extremely lateral position of the gallbladder) a supplementary transverse incision may be added at any level to the principal median incision. The incision is bloodless and rapidly made, allows a rapid and easy closure of the abdomen, and gives a good scar.

Supra-Umbilical Laparotomy in Intestinal Intussusception in Infants.—Fèvre reports eleven cases of intestinal intussusception in infants. In seven patients a supra-umbilical laparotomy was performed and in four patients the supra-umbilical incision was prolonged downward below the umbilicus. Only one of the last four patients died. The author prefers the supra-umbilical incision because it prevents intestinal eventration during and after the intervention, and because the invaginated intestine is found usually in the epigastrium.

Journal de Chirurgie, etc., Brussels

27: 257-280, 1928

Paraffinoma. Moreau.—p. 258.
Late Traumatic Pneumothorax. L. Delrez.—p. 264.
*Compression of Duodenum by Mesenteric Lymph Nodes. Danis and Harven.—p. 268.
*Gastrojejunocolic Fistula. Dejardin.—p. 272.

Compression of Duodenum.—Danis reports one case and Harven two cases of compression of the duodenum by hypertrophied mesenteric lymph nodes. The hypertrophy was caused in one case by tuberculosis, in the other by syphilis. All three patients were operated on for severe abdominal pains with vomiting, constipation and loss of weight, with an uncertain roentgenographic picture and without a preoperative diagnosis. The duodenojejunostomy in all cases was followed by a disappearance of all the symptoms.

Gastrojejunocolic Fistula.—Dejardin reports the case of a man, aged 62, who shortly after a posterior gastroenterostomy, performed on him eleven years before, began to suffer with severe abdominal pains, anorexia, pyrosis, fetid eructations, vomiting and fetid diarrhea. He was extremely emaciated and cachectic, but physical examination was negative. At laparotomy the omentum, the stomach and the intestines were found stuck together in a mass; there was a stenosis of the transverse colon and a fistula between the posterior wall of the colon and the efferent loop of the jejunum. The patient died before the conclusion of the operation.

Journal de Médecine de Lyon, Lyons

10: 185-222 (March 20) 1929

Tumors of Optic Nerve. Rollet and Paufique.—p. 185.
Diagnostic Value of Arterial Tension in Retina. A. Colrat.—p. 197.
Drug Paralysis of Accommodation in Lactation Period in Women. J. Rosnoblet.—p. 205.
*Ocular Disturbances in Quinine Poisoning. J. Rollet.—p. 209.

Ocular Disturbances in Quinine Poisoning.—Rollet reports a case of blindness in a woman, aged 35, after the ingestion of 10 Gm. of quinine sulphate, and makes a study of the ocular disturbances in quinine intoxication. The condition may be observed at any age and in both sexes after the ingestion of from 0.005 Gm. to as much as 30 Gm. of quinine; the gravity of the symptoms depends more on the personal susceptibility of the patient than on the dose of the quinine. In typical cases, after the usual symptoms of quinine intoxication (cephalalgia, vertigo, tinnitus aurium, some degree of deafness, drowsiness, vomiting and sometimes diarrhea), complete blindness appears rapidly, but usually central vision is recovered very soon. The visual field, however, remains contracted. Mydriasis is present, the optic disk is pale and the retinal arteries are constricted. All the symptoms may disappear within several minutes or in several hours, but they may also persist indefinitely, and even the blindness may become permanent. The condition is caused by the action of the quinine on both the retinal nerve cells and the retinal arteries (spasm). The treatment, besides rest and tonic medication, consists of the administration of vasodilating remedies, especially atropine.

Marseille-Médical, Marseilles

66: 157-204 (Feb. 5) 1929

Evolution and Treatment of Endocarditis in Acute Articular Rheumatism. A. Piatot.—p. 157.
*Effect of High Altitude on Blood Pressure. L. Billon.—p. 176.
Cardiac Disturbances in Diphtheria. G. Perrimond.—p. 178.
Rôle of Electrocardiography in Prognosis in Heart Diseases. E. Giraud.—p. 197.

Effect of High Altitude on Blood Pressure.—Billon determined the blood pressure of twenty persons, aged from 20 to 74, at an altitude first of 1,000 meters and later of 3,000 meters above sea level. The ascent was made by automobile, and the 2,000 meters were covered in one hour and thirty minutes, without occasioning any fatigue to the travelers. The barometric reading dropped to 510 mm. of mercury, and the blood pressure of each of the travelers increased, on the average, 20 mm.

Presse Médicale, Paris

37: 369-384 (March 20) 1929

Anatomicopathologic Work of Maurice Letulle. G. Roussy.—p. 369.
Necrotic Form of Acute Otitis Media. G. Portmann and K. Kistler.—p. 375.
*Diagnosis of Postoperative Peptic Ulcers. R. A. Gutmann, R. Jahiel and D. Théodoresco.—p. 378.

Diagnosis of Postoperative Peptic Ulcer.—Gutmann et al. observed twenty cases of peptic ulcer after posterior gastro-enterostomy. The complication is rare (1.5 per cent) and occurs, on the average, from six months to two years, and sometimes as late as twenty years, after the operation. The clinical diagnosis is based mainly on: (1) the exceptional severity of the abdominal pains, which occur usually from four to five hours after the ingestion of food and are relieved only by morphine; (2) the paroxysmal character of the pains, which are not continuous but recur for several days, with more or less prolonged painless intervals between the attacks of pain, and (3) the para-umbilical and, most often, subumbilical localization of the pains. Vomiting and hemorrhages are rare and physical examination is usually negative, but the roentgenographic examination, especially serial roentgenography, always gives positive indications.

Revue Française d'Endocrinologie, Paris

7: 1-88 (Feb.) 1929

*Relation Between Endocrine Glands and Hereditary Syphilis in Mental Disturbances in Children. Drouet and Hamel.—p. 1.
*Vitiligo in Exophthalmic Goiter. C. I. Parhon and M. Dérévici.—p. 12.
*Inhibitory Action of Spleen on Genitalia. A. Radossavlyévitch and A. Kostitch.—p. 23.

Relation Between Endocrine Glands and Heredosyphilis in Mental Disturbances in Children.—In the examination of 111 children suffering with various mental disturbances, Drouet and Hamel found hereditary syphilis in 108 (97.3 per cent) and some kind of cranial, dental, facial, ocular or other dystrophy in ninety-five. Pharmacologic tests of the vegetative nervous system revealed various monoglandular or pluriglandular disturbances of the endocrine glands in ninety-one of the ninety-two children. Therefore the authors come to the conclusion that there exists a close relationship between hereditary syphilis, the endocrine glands and mental disturbances.

Vitiligo in Exophthalmic Goiter.—Parhon and Dérévici report a case of vitiligo and exophthalmic goiter in a woman, aged 20. Patches of depigmentation of various size and form were observed on the chest, back and abdomen, and the surrounding skin was more pigmented than the skin on the remainder of the body. The Wassermann reaction was negative. The authors think that the vitiligo in this case was due to the hyperthyroidism, because experimentally bleaching of the dark colored feathers was obtained in birds by feeding them with a thyroid preparation.

Dysgenitalism of Splenic Origin.—Dysgenitalism of various degrees was observed in certain splenomegalias (such as, for instance, Banti's disease and hemolytic splenomegalia), and sometimes the hypogenitalism disappeared after splenectomy. On the other hand, splenomegalia in a normal but immature person can accelerate the sexual development. The possibility of the inhibitory action of the spleen on the genitalia was confirmed by the experiments of Radossavlyévitch and Kostitch. In sixteen of nineteen splenectomized white mice, an early appearance of the estrual cycle was observed. In the mice whose weight was more than 10 Gm., such an effect of splenectomy was observed more seldom, which proves that the action of the spleen is more intensive before the genitalia have developed fully.

Revue Française de Gynécologie et d'Obst., Paris

24: 81-144 (Feb.) 1929

Diagnosis and Treatment of Sterility in Women. A. Hamant.—p. 81.
*Treatment of Dysmenorrhea, Amenorrhea and Sterility by Uterine Intubation. B. Selborst.—p. 102.
Protection of Perineum in Normal Labor. R. Keller.—p. 118.

Treatment of Dysmenorrhea, Amenorrhea and Sterility by Uterine Intubation.—For the treatment of 100 patients with dysmenorrhea, amenorrhea and sterility, Selhorst, after a preliminary general or local remedial treatment, used prolonged dilation of the cervical canal by means of an intrauterine stem pessary, employing the model modified by him. A glass tube pessary, from 50 to 80 mm. in length and from 6 to 12 mm. in diameter, with no perforations at the apex and only two small holes for the fixation sutures near the apex, was introduced into the cervical canal (after dilation and curettage), and fixed to the cervix by means of two sutures. The patients came back two and three times for control, and the treatment was usually completed in from six to eight weeks. No accidents were observed during the treatment. Amelioration was obtained in all cases; grave dysmenorrhea was cured, and women for a long time sterile became pregnant. The treatment was used only in cases of stenosis of the internal uterine orifice and primary or secondary infantilism of the uterus.

Schweizerische medizinische Wochenschrift, Basel

59: 325-348 (March 23) 1929

Importance of Volatile Poisonous Gases. H. Zangger.—p. 325.
*Treatment of Detachment of Retina by Cauterization of Laceration in Retina. A. Vogt.—p. 331.
Transmissibility of Brucella Abortus from Animal to Man. W. Frei. —p. 334.
Anesthetic or Curarizing Action of Magnesium. B. Wiki and M. Béboux. —p. 337.
*Treatment of Tetanus. E. Ceppi.—p. 340.

Treatment of Detachment of Retina by Cauterization of Laceration in Retina.—Vogt reports four cases of detachment of the retina in patients with axial myopia, in which on ophthalmoscopic examination some laceration of the retina was found. Through an incision in the conjunctiva and in the sclera, presumably corresponding to the site of the hole in the retina, a cautery was introduced into the eyeball, and the retina was cauterized as near as possible to the site of the laceration. After the operation the visual acuity in all patients rose from less than 0.1 to 0.7 or even to 1, and on ophthalmoscopic examination a scar was visible on the site of the laceration. The retina had assumed a normal or an almost normal aspect. The recovery is still present on the average of one and one-half years after the operation. In four similar cases the author observed a partial amelioration of the condition. The cure of the detachment of the retina by the obliteration of the laceration in the retina confirms the etiologic importance of trauma in the pathogenesis of the detachment of retina, even in so-called spontaneous forms of the condition.

Treatment of Tetanus.—Ceppi reports a case of tetanus after a contused wound of the finger in a boy, aged 16, which was cured by means of specific serum therapy combined with large doses of bromides and chloral hydrate. He thinks that the administration of large doses of these remedies checks the paroxysms of spasm and especially decreases the opisthotonos.

Archivio Italiano di Chirurgia, Milan

23: 1-152 (Jan.) 1929

*The Spleen in Relation to Digestion. P. Barco.—p. 1.
*Renal Hemostasis by Means of a Plastic Graft of Muscle or Fat. M. Del Rio.—p. 91.
Giovanni Rossi, Clinician, Surgeon and Didactician of Parma. G. M. Giuliani.—p. 131.

The Spleen in Relation to Digestion.—From his series of experiments on dogs, Barco concludes that splenectomy does not cause marked modifications of the digestive functioning of the stomach. But, analyzing separately the curve of the total acid and, at the same time, that of free hydrochloric acid and of combined hydrochloric acid, he found a diminution of all the values, which was more or less evident and which varied in duration between ten and thirty days after splenectomy, being more marked during the first days. Normal functioning was restored after the lapse of a month, at the most. Greater changes were observed in the amount of pepsin secreted, which may be diminished 50 per cent or more but acquires its original value after thirty days. No appreciable modification was effected by splenectomy in the lipolytic capacity of the gastric juice. The radioscopic examination of the stomach, systematically carried out before and after splenectomy, showed no evident modification in the index of motility.

Renal Hemostasis by Means of a Graft.—From his experiments on rabbits, Del Rio concludes that renal hemostasis, by means of a plastic graft of muscle or fat, is prompt, complete and lasting, and hence is very satisfactory. The presence, within the renal parenchyma, of heterogenous tissue such as muscle or fat generates an intense connective tissue reaction associated, for the most part, with an active calcareous infiltration about the remnants of the graft and the sutures that serve to hold it in place. However, the author does not think that, in clinical practice, it is advisable to substitute for the ordinary methods of renal hemostasis, by means of suturing, new methods based on the use of heterogenous tissues, such as fat or muscle.

Chirurgia degli Organi di Movimento, Bologna

13: 229-332 (Jan.) 1929

*Congenital Pseudarthrosis of Tibia and Fibula. F. Graziano.—p. 245.

Congenital Pseudarthrosis of Tibia and Fibula.—Graziano reports a case in a girl, aged 6. In view of the importance of the thyroid in osteogenesis, it was significant that the patient's mother presented a slight enlargement of the thyroid (insufficiency). Radiography revealed that, in the lower third of the right leg, the proximal stumps of the tibia and the fibula were a considerable distance from the distal stumps. The mother had noted the marked curvature of the right leg since the child's birth. The fibrous tissue between the tibial fragments was excised and the bone stumps were freshened. A bone splint with the periosteum was taken from the tibia of the same side. Two niches were made, one in the distal stump and one in the proximal, and the tibial splint was ingrafted. The splint was fixed with catgut sutures. The soft parts were sutured in layers. A cast was worn for five months. After that time the splint was absorbed. There was some movement of the stumps, but the limb was in alinement. Two years later, the same operation was repeated. Twelve days later, periarterial sympathectomy of the femoral artery on the same side was performed with the hope of producing arterial hyperemia at the site of the pseudarthrosis, thus facilitating bone recovery. The cast was worn six months, after which time the splint was not visible. Considerable callus had formed but it was not adequate.

Clinica Ostetrica, Rome

31: 1-60 (Jan.) 1929

*Ovarian Resection in Treatment of Hemorrhagic Metropathy in Young Women. T. Cuizza.—p. 9.
Rupture of Ovarian Abscess During Childbirth: Acute Peritonitis. O. Tenani.—p. 21.
A Diagnostic Error with Reference to Placenta Praevia. G. Addessi. —p. 24.
Uterine Curettage and Its Indications. E. Casati.—p. 26.

Ovarian Resection in the Treatment of Hemorrhagic Metropathy in Young Women.—Cuizza reports in detail three cases in women, aged 27 to 35, and concludes that in the treatment of menorrhagia in young women due to dysfunctioning of the ovaries, and particularly to the pathologic persistence of one or more maturing follicles, with resulting lack of formation of corpus luteum, resection of the ovaries is an operation that may bring about a cessation of the menorrhagic symptoms and a regulation of the functional rhythm of the ovaries without impairing in the least the genital functions of the young women: menstruation, reproduction and internal ovarian secretion. Ovarian resection is vastly preferable to roentgen castration (complete or partial). Ovarian resection may be resorted to after the usual medical aids have been tried in vain, unless palpatory evidence of cystic degeneration of the ovaries, associated possibly with pain symptoms, shall constitute in itself sufficient indication for an intervention. To assure success, the resection must be ample, at least half of the whole ovarian parenchyma being removed, care being taken to remove the ovarian tissues that present the most marked degenerative lesions. Curettage of the uterus should be omitted, unless the intensity of the hemorrhage at the time and the anemic state of the patient shall require a prompt arrest of the hemorrhage.

Policlinico, Rome

36: 1-60 (Jan. 15) 1929. Surgical Section

*Experimental Postoperative Bronchopulmonitis. M. Ascoli.—p. 3.
*Tuberculosis of Gluteotrochanteric Serous Bursa. G. Ciaprini.—p. 7.

Experimental Postoperative Bronchopulmonitis.—From this second series of researches (on dogs), Ascoli concludes that in normal animals it is possible to provoke inflammations of the lungs of a mild type that tend to resolve and do not give rise to a septicemia, even with a strain of pneumococcus of low virulence. The quantity of broth culture injected into the respiratory passages must always be around 20 cc. and it must be injected directly into the bronchi with a sound introduced through the natural passages. The author feels justified in affirming also that, while it is possible with a slightly virulent pneumococcus to produce mild inflammations of the lungs of normal dogs, by the use of a definite technic and a definite quantity of septic material, it is not possible by injecting a smaller quantity of broth culture directly into the trachea through the skin. Four controls thus treated all showed perfectly normal lungs. However, dogs subjected to simple gastroenterostomy showed, in three cases out of eight, pulmonary lesions comparable to those obtained by American investigators.

Tuberculosis of the Gluteotrochanteric Serous Bursa.—Ciaprini reports that, in a young artillery sergeant, aged 21, a diagnosis of tuberculous deep trochanteric bursitis was reached, whereupon local treatment, with aspiration of the contents of the sac and introduction of iodized glycerin (10 per cent), was tried for a month, but without success. Recourse was then had to careful total extirpation of the tumefaction and its extensions, with closure by first intention of the operative wound. This is the only effective therapeutic indication to be followed, and is one that, aided by the usual general treatment of tuberculosis, will cure radically a tuberculous infection of the serous bursa, the prognosis being usually benign.

Anales de la Facultad de Medicina, Montevideo

14: 1-122 (Jan.) 1929. Partial Index

Rupture of Hydatid Cyst of Liver into Peritoneal Cavity. J. C. del Campo.—p. 90.
*Malaria in Children in Montevideo. A. Carrau.—p. 103.
*Treatment of Toxic Amblyopia with Massive Doses of Strychnine. A. Meerhoff and W. Meerhoff.—p. 114.

Malaria in Children in Montevideo.—Carrau studied seven cases of malaria in children aged from 3 to 12 years; the predominant symptom was enlargement of the spleen, which disappeared with the onset of fever. Two children had an intense and lasting neuralgia after the disappearance of the fever. One child had chorea two months after the onset of malaria and another had pneumonia. Treatment consisted in the daily administration of about 0.008 Gm. of diquinine carbonic ester. All the children got well. Some had secondary malaria. In the blood of two patients the malarial hematozoon was found. Malaria is not indigenous in Uruguay. These children had come from foreign countries.

Treatment of Toxic Amblyopia with Massive Doses of Strychnine.—The Meerhoffs report that the use of subcutaneous injections of from 0.015 to 0.030 Gm. or more of strychnine in increasing doses, according to the patient's tolerance, yielded the best results in the treatment of alcoholic amblyopia.

Semana Médica, Buenos Aires

36: 485-544 (Feb. 28) 1929

Paramount Precautions in Performance of Blood Transfusion. A. Yódice.—p. 490.
Vertebral Lymphogranuloma. J. W. Tobias.—p. 493.
Monosymptomatic Duodenal Ulcer. A. M. Zelasco and D. Rubinstein.—p. 495.
Mixed Tumors of Submaxillary Gland. O. Ivanissevich and R. C. Ferrari.—p. 497.
Index of Strength of Cadets Who Enter Military Naval School. L. Sánchez Moreno.—p. 508.
Hydatid Cyst on Lower Surface of Liver and Stiller's Sign. G. Costa Bertani.—p. 512.
*Severe Dysenteriform Enterocolitis in Infancy. C. A. Bruchmann and L. Stabile de Nucci.—p. 514.
Adenoiditis in School Children. F. A. Rojas.—p. 520.
*Facial Paralysis in Herpes Zoster. J. Matusevich.—p. 522.
Apparatus for Blood Transfusion. C. Rechniewski.—p. 524.
Pulmonary Moniliasis. J. G. Peruchena.—p. 527.
Injections of Hexamethylenetetramine Phenyl Cinchonate in Herpes Zoster. J. J. Darnet.—p. 535.
Coexistence of Gastroduodenal Ulcer and Epigastric Hernia. F. Fernández Martínez.—p. 537.

Severe Dysenteriform Enterocolitis in Infancy.—Bruchmann and Stabile de Nucci have observed serious enterocolitis beginning late in the spring and continuing during the summer. Weaning and artificial feeding play an important rôle. Infants fed on mother's milk only rarely suffer from this disease. The enterocolitis generally has a sudden onset and a fatal outcome. Notwithstanding the treatment, the nature of the feces does not change. Four or five days after the beginning of the disease choleriform symptoms appear. Bronchopneumonia is a frequent complication. The authors present six cases in children, aged from 1 to 2 years. In the treatment, antidysentery serum, emetine, camphor in oil or castor oil were given and the infants were placed on mother's milk. Four of the six children died.

Facial Paralysis in Herpes Zoster.—Matusevich's patient, aged 38, presented a peripheral facial paralysis, vesicular rash and auditory disturbances. A diagnosis of herpes zoster was made. The facial paralysis appears either several days after the rash or accompanies it; when total, it lasts from three to six months. The prognosis is good, since after effects are not common. The treatment consists of rest (while subjective and skin manifestations persist), local application of siccative and sedative ointments and dusting with inert powders. In order to relieve the pain, acetylsalicylic acid, quinine or acetphenetedin may be given. Electrotherapy is dangerous because it may cause spasms.

Beiträge zur klinischen Chirurgie, Berlin

145: 379-540 (Jan. 16) 1929

*Examination of Gallbladder Bile in Atypical Diseases of Gallbladder: (Diagnostic and Prognostic Value: Function of Gallbladder). H. Friedrich.—p. 379.
Postoperative Motor Disturbances of Stomach: Gastric Atony. F. Reischauer.—p. 397.
*Late Results, Especially Growth Disturbances, in Roentgen Irradiated Bones and Joints of the Young. W. Schmidt.—p. 440.
Classification of Gunshot Wounds of Skull. B. Laqueur.—p. 457.
*Significance of Chronic Abscesses of Bone (Brodie's Abscesses). P. Siwon.—p. 463.
Treatment of Fractures of Forearm: Recognition of Muscle Mechanics. F. Schnek.—p. 484.
Tears of Biceps of Arm. M. Stolze.—p. 513.
Pneumatocele of Occiput. K. Laufenstein.—p. 524.
Myoma of Duodenal Bulb. A. Bernstein.—p. 532.

Examination of Bile in Atypical Diseases of Gallbladder.—Friedrich stresses the fact that not infrequently no evidence of disease of the gallbladder is found at operation for such a condition. In such cases bile should be aspirated from the gallbladder and examined as to its appearance and concentration. The normal gallbladder thickens the bile flowing into it from the liver, whereas the diseased gallbladder, even though not macroscopically diseased, has lost this power in varying degree. Then, too, the color of the bile is changed. The author reports six such cases and defends the correctness of his observations by stating that two and a half years after cholecystectomy these patients are still entirely well. These observations point to chronic stasis and chronic inflammation.

Late Results of Roentgen Treatment of Bone and Joint Tuberculosis.—In four of six cases reported on by Schmidt there was interference with the longitudinal growth of bones after this treatment. It is regarded as significant that these cases were treated during 1919 and 1920 and that invariably there was also an injurious effect on the skin. At that time it was customary to give large doses of roentgen rays. Since this practice has given way to small doses, no untoward effects have been noted. In thirteen other cases shortening can definitely be ascribed to destruction of bone by the disease. In ten other cases, surgical resection was responsible for the shortening. Of a total of sixty-one cases treated with roentgen rays, only six showed evidence of bad effect—the four mentioned already and two additional cases. The author says: the younger the patient, the smaller the dose and the greater the interval between treatments. He prefers to give 15 per cent of the Holzknecht erythema dose and never more than 20 per cent, with intervals between treatments of not less than six weeks. With these restrictions and limitations, roentgen therapy of bone and joint tuberculosis may be regarded as a highly desirable conservative form of treatment.

Chronic Abscess of Bone.—Siwon reports eight cases. The patients are usually young adults; the tibia is the usual seat of the abscess; the metaphysis and the diaphysis are almost equally affected (60:40 per cent of the cases). The diagnosis is exceedingly difficult unless a roentgen examination is made. Pain, localized near a joint (usually the knee), and recurring effusions into the joint should direct suspicion to the presence of such an abscess (Brodie's). The treatment is always surgical.

Deutsche medizinische Wochenschrift, Berlin

55: 427-468 (March 15) 1929

*Treatment of Abortion. H. Martius.—p. 427.
Obstetrics in Private Practice and in the Clinic. W. Boecker.—p. 430.
Practical Value of Test Breakfast. R. Ehrmann.—p. 431.
*Insulin in Treatment of Pernicious Anemia. L. von Varga.—p. 433.
*Phytotoxic Phenomenon in Pernicious Anemia. L. A. Tscherkes and G. Goldstein.—p. 434.
*Clinical Aspects of Diseases of Peripheral Vessels. C. E. Benda.—p. 434.
*Rickets During Summer Months. J. Schönen.—p. 436.
Microscopy of Capillaries During Childhood. L. Doxiades.—p. 438.
Active Diphtheria Immunization. I. Valentin.—p. 441.
New Points of View in Psychoanalysis. J. H. Schultz.—p. 442.
Description of Insufflator with Obturator. E. Glass.—p. 444.

Treatment of Abortion.—Martius asserts that, in recent years, the treatment of abortion represents a more difficult problem than formerly, because in most cases the abortion is not spontaneous but due to artificial intervention. The treatment should aim to effect a complete and quick evacuation of the uterus. However, in patients with fever the uterus may be evacuated only if the parturient canal is sufficiently dilated. If this is not the case the physician should postpone the operation until the fever abates. Ecbolics should be avoided in such instances, because sepsis is likely to result. Martius states that, as a rule, abortions during the first nine weeks of pregnancy are less difficult, but after that they become more complicated. In abortions during the more advanced stages of pregnancy, the dilatation of the parturient canal is of great significance. As the best means of effecting this, Martius advises the introduction of a laminaria tent or, if the canal is partly dilated, a cervical tampon. This method has also ecbolic effects. In the actual evacuation of the uterus one should take advantage of the natural powers of expulsion as far possible. In most cases, however, some aid will be necessary. The author advises that a digital examination be made first. After that forceps may be applied. For the final curettage, a large, blunt curet should be used. A sharp curet should never be used in these cases.

Insulin in Treatment of Pernicious Anemia.—Von Varga points out that liver preparations are generally considered the most effective medicament for the treatment of pernicious anemia. However, the cachectic condition of many patients and the lack of appetite are frequently contraindications to liver therapy. In order to increase the appetite, the author gave injections of 30 units of insulin twice a day. As a result the appetite increased. Later he gave liver preparations in combination with the insulin injections. The daily quantity of liver extract given was equal to about 250 Gm. of fresh liver. The author employed this method in eight cases, and it was effective in all of them.

Phytotoxic Phenomenon in Pernicious Anemia; Behavior During Liver Therapy.—Tscherkes and Goldstein state that since the introduction of liver therapy for pernicious anemia, the interest of many authorities has been directed to the etiology of this disease. Researches which were conducted by Macht proved that the blood of patients who are suffering from pernicious anemia has toxic effects on the germinating power of the seeds of certain plants. This was designated the "phytotoxic phenomenon." Experiments made by the authors substantiated this discovery. In testing the blood of normal persons, they found that it also checks the germinating power of seeds to some extent. The blood of several animals was likewise examined and showed a similar action. But while the phytotoxic index in healthy persons was never below 73, in patients with pernicious anemia it always was less than 51. In order to determine the effects of liver therapy on the phytotoxic content of the blood, the authors examined ten patients with pernicious anemia. Three of these had just entered the clinic, while the remaining seven had undergone liver treatment for several months. The latter appeared to be entirely well and were able to follow their occupations. The examination proved that the phytotoxic action of the blood was practically the same in all ten patients. On the basis of these observations the authors conclude that although liver treatment generally gives good results, it does not influence certain disturbances in metabolism. They reason that these disturbances lead to the development of the phytotoxic elements, which in turn are probably the cause of relapses. They also assert that the determination of the phytotoxic index is a valuable aid in the diagnosis of doubtful cases.

Clinical Aspects of Diseases of Peripheral Vessels.—Benda reports the case of a man, aged 32, in whom, after two weeks of severe pains in the calves of his legs, symptoms of intermittent claudication appeared. Five months later an area of necrosis appeared on the small toe of the left foot. A clinical examination revealed the diseased condition of the peripheral vessels. The arms and legs were affected, but in differing severity. At first the disease took a progressive course. Sufficient rest and the application of medicaments checked the advancing disease, and later the symptoms gradually disappeared. Histologic examination of the amputated toe did not solve the etiologic problem of the case. Several symptoms indicated a syphilitic infection, but repeated Wassermann tests always gave negative reactions. The assumption that the disease might have been caused by irritation from cold, or by nicotine, could likewise not be verified. Concerning the treatment of the disease Benda states that vasodilator medicaments are valuable. He also advises cardiac tonics, particularly strophanthus. Digitalis should be avoided. In some cases physical therapy is advisable, especially diathermy, galvanization or electric baths. Walking exercises should be strictly regulated.

Rickets During Summer Months.—Contrary to the general belief that rickets occurs most frequently during the late winter and early spring months, Schönen observed a large number of new cases from June to September. He reasons that this is partly due to the meteorologic conditions in the district of Greifswald. Cities in different locations, such as Dresden and Munich, did not have a large number of cases of rickets during the summer months. On account of the lower altitude of Greifswald, and also because of the greater humidity of the atmosphere, more ultraviolet rays are absorbed. This loss of ultraviolet irradiation affects human beings not only directly but also indirectly, because the food, particularly milk, is also influenced by the deficiency in ultraviolet rays. Concerning the prophylaxis of rickets, the author states that irradiation of the milk supply might be effective.

Deutsche Zeitschrift für Chirurgie, Leipzig

215: 1-146 (March) 1929

Medicine, Especially Surgery, in Ancient Rome. Hagedorn.—p. 1.
Experimental Study of Exophthalmic Goiter. O. Hoche.—p. 14.
Traumatic Dystrophia Adiposogenitalis. M. Geldmacher.—p. 30.
*Lead Poisoning from Retained Lead Missile. W. W. Haagen.—p. 39.
Diverticulum of Bladder. A. Schmidt.—p. 48.
Fibro-Epithelioma Papillare of Maxillae. F. Härtel.—p. 66.
*Resorptive Power of Knee Joint. P. Rostock.—p. 76.
Treatment of Fracture of Patella, Tibia and Fibula. W. Levy.—p. 85.
Sport Injuries: Luxation Fracture of Ankle Joint. T. Möhlmann.—p. 100.
Localized Osteitis Fibrosa of Spinal Column. H. Uiberall.—p. 108.
*Treatment of Varicose Veins: Schede-Kocher Method. M. Siebner.—p. 115.
Severe Injury of Kidney by Tribromethanol. H. Hillebrand.—p. 122.
Diphtheritic Infection of Wound of Penis and Scrotum. A. Schmidt.—p. 125.
Arteriovenous Aneurysm of External Iliac Vessels Following Appendectomy. H. Meschede.—p. 130.
Oxyuris in Wall of Appendix. H. Nicolaus.—p. 133.
Injury of Pharynx by Mouthpiece of Tin Trumpet. H. Meschede.—p. 137.
Genesis of Congenital Lateral Cervical Fistulas and Cysts. P. E. A. Nylander.—p. 139.
Osteoplastic Operation for Carcinoma of Tongue: Krassin's Method: Five Cases. N. N. Nasarow and M. N. Kuschewa.—p. 145.

Lead Poisoning from Retained Lead Missile.—Haagen relates a case in which lead poisoning was definitely traced to a gunshot wound of the knee sustained in 1904, twenty-two years before any symptoms were manifested. These symptoms were referable to the nervous system almost entirely and definitely pointed to lead poisoning as a cause. Careful questioning and examination disclosed the presence of the gunshot wound of the knee, and roentgen examination clearly showed the

presence of six or more fragments of the lead missile. Operation to remove these fragments was suggested but was not done.

Resorptive Power of Knee Joint.—In 100 cases of effusion into the knee joint, Rostock studied the resorptive power of the tissues. After removal by aspiration of a certain amount of fluid, 5 cc. of a 5 per cent solution of sodium iodide was injected into the joint. In cases of empyema resorption occurred more rapidly than in the aseptic cases. In the bloody effusions resorption varies with the age of the effusion. In recent cases, it begins early and soon reaches its peak; whereas in the older cases the speed of absorption is the same from the first to the eighth hour. In the chronic recurring serous effusions absorption was noted only during this time, and it began later. In such cases it is suggested that an arthrotomy be performed and the chronic case converted into an acute case so as to better the resorptive powers of the joint tissues.

Treatment of Varicose Veins by Schede-Kocher Method.—Siebner fears that the trend toward treating varicose veins by injection has led to a disregard of operative methods, greatly to the detriment of the patients. All cases are not suitable for injection; and some cases are suitable only for surgery. He prefers the Schede-Kocher method of ligation and reports his experiences with twenty cases. Five patients were lost from view. Of the remaining fifteen, six were completely cured; nine had recurrences but they were not incapacitated nor were they uncomfortable.

Jahrbuch für Kinderheilkunde, Berlin

123: 111-228 (March) 1929

*Cerebral Complications Following Vaccination. A. Mader.—p. 111.
Apnea in the New-Born. A. Peiper.—p. 129.
*Lymphogranulomatosis in Children. W. Feer.—p. 145.
*Exfoliative Dermatitis in Children. O. Bäumler.—p. 170.
*Lipoid Cell Splenohepatomegaly. G. Dienst.—p. 181.
*Roentgen Treatment of Whooping Cough. K. Schrutz and O. Vychytil.—p. 200.

Cerebral Complications Following Vaccination.—Mader reviews the cases of cerebral complications following vaccination reported in the literature and discusses six cases that he observed personally. He states that an interval of about ten days usually elapses between the vaccination and the appearance of symptoms of cerebral irritation. Contrary to what is observed in epidemic encephalitis, the Babinski reflex is positive as a rule and paralysis of the eye muscles is common. The condition usually runs an acute course and in most cases the patient recovers completely.

Lymphogranulomatosis in Children.—Feer reports nine cases of lymphogranulomatosis in children ranging in age from 3 to 10 years. All of the patients were given roentgen treatment; one of them was cured and has remained free from recurrence for five and one-half years. The author believes that the localization of the process depends on the portal of entry of the causal agent. If it enters through the mucosa of the pharyngonasal cavity the regional cervical lymph nodes are involved first. If it enters through the lungs the mediastinal lymph nodes enlarge. If it enters through the mucosa of the intestinal tract, the mesenteric and retroperitoneal lymph nodes are involved first and the process spreads through the thoracic duct, particularly to the supraclavicular lymph nodes on the left side; this fact should always be kept in mind in arriving at the prognosis and in outlining the treatment of patients with lymphogranulomatous involvement of the supraclavicular lymph nodes on the left side.

Exfoliative Dermatitis in Children.—Owing to the fact that he observed typical cases of Ritter's disease in two boys, aged 3½ and 4½ years, Bäumler recommends that the term dermatitis exfoliativa neonatorum be replaced by the more inclusive term dermatitis exfoliativa infantum.

Lipoid Cell Splenomegaly.—Dienst describes a case of lipoid cell splenohepatomegaly in an infant, aged 3 months. He believes that for clinical purposes the Niemann-Pick and the Gaucher types of splenohepatomegaly should be considered as two expressions of the same condition and should be designated merely as lipoid cell splenohepatomegaly. This process is characterized clinically by a yellowish brown pigmentation of the skin, enlargement of the spleen, liver and lymph nodes, distention of the abdomen and emaciation of the patient. Nervous disturbances are frequently observed. The morphologic blood picture is normal. The disease appears to be a congenital hereditary constitutional process caused by a disturbance in the metabolism of lipoids, with deposition of complex substances in the cells of the reticulo-endothelial system. It rapidly leads to death either from increasing cachexia or from an intercurrent infection.

Roentgen Treatment of Whooping Cough.—Schrutz and Vychytil's experience in the roentgen treatment of twenty-six cases of whooping cough confirms their belief that enlargement of the intrathoracic lymph nodes in whooping cough is an important factor in the mechanism of the convulsive cough. From the general condition of the child and from the number and intensity of the attacks of coughing one can draw a conclusion regarding the degree of enlargement of the intrathoracic lymph nodes. The neuropathic diathesis should be kept in mind, however, because in this condition, although the attacks of coughing are violent, the changes in the lymph nodes are insignificant. Following the regression of the lymph nodes as the result of roentgen treatment, the spastic component of the cough decreases and may completely disappear. The most suitable time for beginning the roentgen treatment is during the convulsive stage, about the third or fourth week. The vomiting usually disappears in from two to five days after the treatment is begun. This is followed by a decrease in the number and intensity of the attacks of coughing and by an improvement in the general condition of the patient.

Klinische Wochenschrift, Berlin

8: 481-528 (March 12) 1929

Studies in Fatigue: Influence of Exercise on Physical Capacity. W. Strauss and C. Müller.—p. 483.
Clinical Researches Concerning Action of Analgesics. H. Hoff and P. Wermer.—p. 488.
*Radiologic Examination of Innervation of Esophagus. K. Kuré, N. Fujii and K. Kawaguzi.—p. 491.
*Poisoning with Dimethyl Sulphate. H. Strothmann.—p. 493.
Symptomatology of Nonsuppurating Sinus Thrombosis. P. Hilpert.—p. 496.
Cardiosympathetic Reflex Phenomenon. W. Misch and A. Lechner.—p. 500.
Ovarian Hormone and Basal Metabolism. G. Koehler.—p. 502.
*Quantity of Blood in Patients with Adipositas. S. A. Holbøll.—p. 503.
Technic of Puncture of Arteries. K. Dresel and F. Himmelweit.—p. 504.
Anatomic Characteristics of Primary Lesion of Lungs in Tuberculosis. W. Blumenberg.—p. 505.

Radiologic Examination of Innervation of Esophagus.—In order to determine the innervation of the esophagus, Kuré et al. made experiments on dogs. They observed a synergic action of the sympathicus and the parasympathicus. The results of their experiments are thus summed up: 1. Injection of calcium weakens the peristalsis of the esophagus. 2. Section of the vagi in the neck results in complete absence of peristalsis, and the opening of the cardia is impossible after this operation. 3. Section of the vagi immediately above the diaphragm does not prevent peristalsis, but the cardia cannot be opened. 4. Extirpation of the superior cervical ganglion or of the stellate ganglion causes a peculiar but mild disturbance in the upper portion of the esophagus. 5. Exclusion of the sympathetic fibers of the celiac ganglion and section of both vagi cause disturbances in the cardia. Concerning the idiopathic dilatation of the esophagus, the authors believe that it is probably due to a paralysis of the vagi.

Poisoning with Dimethyl Sulphate.—Strothmann reports on three men who, by accidentally inhaling volatile vapors of dimethyl sulphate, were poisoned. The vapors caused a burning sensation in the eyes, nose and throat. One of the men who had inhaled a larger quantity of vapors was brought to the hospital. He appeared cyanotic; the breathing was panting; the eyes were shut; the conjunctiva was reddish and swollen, and tears were streaming out of the eyes. The mucous membrane of the oral cavity and of the nose was reddish. Râles were noticeable, particularly over the trachea. About eight hours later the patient's condition was much worse. The temperature was increased. Examination with the laryngeal mirror showed swelling of the vocal cords and a large quantity of sputum, which the patient was unable to expel. He had a severe cough and breathing was difficult. Following the appli-

cation of epinephrine spray and infusion of a 4 per cent solution of sodium carbonate, the condition of the patient gradually improved. After sixteen days he still had a mild conjunctivitis and bronchitis. He was dismissed on the twenty-fourth day. Concerning the prognosis in cases of poisoning with dimethyl sulphate, the author states that in mild cases it is favorable; in more severe cases, however, there is danger of pulmonary infiltrations. Chronic bronchitis or chronic laryngitis are also frequently a result of the poisoning. To prevent poisoning with dimethyl sulphate, Strothmann advises that persons who have to handle it should wear gas masks.

Researches Concerning Quantity of Blood in Patients with Adipositas. — Holbøll examined ninety-six persons. Forty-eight were of normal weight, thirty-one were overweight and seventeen were underweight. He found that the coloring matter which is introduced into the blood to facilitate the test mixes more easily and evenly in men than in women. To determine the quantity of blood in women, blood should be taken from two different veins. The quantity of blood varied according to the weight of the persons. The amount of blood is largest in persons who are underweight. The percentage decreases with the increasing weight. The variation is, however, only slight. If it is taken into consideration that the fatty tissues contain only a small amount of blood, it may be inferred that that part of their vascular system which is in a normal condition contains a larger quantity of blood. In spite of the fact that, in proportion to the weight, the patient with adipositas has a smaller amount of blood than the normal person, the total quantity of blood is nevertheless larger. It has been observed, however, that the size of the heart does not increase in the same proportion as the quantity of blood. The author reasons that this condition is probably the etiologic factor of the cardiac insufficiency which is frequently observed in patients with adipositas.

Medizinische Klinik, Berlin

25: 417-456 (March 15) 1929

Clinical Aspects of Brucella Abortus Infection in Man. H. Curschmann. —p. 417.
Active Immunization Against Diphtheria. H. Opitz.—p. 419.
*Epidemic of Acute Anterior Poliomyelitis in Komotau-Görkau. E. Hoke. —p. 421.
Surgical Treatment of Retroflexion of Uterus. O. Gerich.—p. 423.
*Clinical Aspects and Pathogenesis of Agranulocytosis. F. Lasch.—p. 425.
*Acromegalia in Relation to Diabetes. A. Flater.—p. 426.
*Adams-Stokes Syndrome in Diphtheria. S. Korach.—p. 427.
Pathogenesis of Bronchial Asthma: Prophylaxis of This Disease. E. Schilcher.—p. 429.
Micro-Meinicke Reaction in Syphilitic Mice. A. Zih.—p. 431.

Epidemic of Acute Anterior Poliomyelitis in Komotau-Görkau.—Hoke reviews twelve cases of acute anterior poliomyelitis. Three of the patients were adults and nine were children. Five recovered completely, four were dismissed in a partly improved condition, one with a doubtful prognosis is still under observation and two adult patients died. Proof of direct transmission from one patient to another could not be found. However, the frequency of cases in this district gave the disease a somewhat epidemic character. Concerning the treatment the author states that diathermy gave good effects. He also obtained good results with a massage apparatus, which combined massage with faradization.

Clinical Aspects and Pathogenesis of Agranulocytosis. —A case of agranulocytosis is reported by Lasch. A woman, aged 62, who had suffered from articular rheumatism for twelve years, suddenly developed a severe tonsillitis and an inflammation of the pharyngeal glands, with chills and high fever. Examination of the blood revealed agranulocytosis. A blood culture showed diplococci. The patient died after three days. Postmortem examination revealed diplococci in the spleen. The author comes to the conclusion that agranulocytosis is not, as some authorities suppose, an independent disease, but rather the symptom of a severe, rapidly developing sepsis.

Acromegalia in Relation to Diabetes.—It is pointed out by Flater that patients with acromegalia usually show disturbances in their carbohydrate metabolism. Glycosuria is observed in most cases. The author reports the case of a woman, aged 54, who developed typical symptoms of acromegalia. Three years later she developed the characteristic signs of diabetes mellitus. For about two years her condition was practically unchanged, her general health being fairly good. Then Flater commenced insulin treatments, and the sugar content of the blood and the urine reacted promptly. He states that some authorities assume that in case of acromegalia, on account of the overfunction of the pituitary body, insulin gives only negligible results. His observation, however, did not verify this assumption, and he therefore concludes that diabetes in combination with acromegalia should be treated with insulin in the same manner as diabetes without this complication. The author could not determine whether in this instance the diabetes was a result of the acromegalia or whether it was just a coincidence. However, the frequent concurrence of glycosuria with acromegalia is, according to the author, not a mere coincidence but due to the influence of the pituitary body on the carbohydrate metabolism.

Adams-Stokes Syndrome in Diphtheria.—Korach reports two cases of diphtheria in young men, aged 20 and 24. During the second week of the disease both of them developed the typical symptoms of Adams-Stokes disease. The attacks increased in frequency and severity, and both patients died after several days. The author considers these cases noteworthy, because Adams-Stokes disease is generally considered as a disease of senile persons, the majority of cases occurring in patients beyond the age of 50. The cases are also remarkable on account of their association with diphtheria. Ordinarily the Adams-Stokes syndrome is usually observed after syphilis, pneumonia or typhoid.

Medizinische Welt, Berlin

3: 369-394 (March 16) 1929

Torsion of Fallopian Tube. E. Möhring.—p. 369.
Prognosis of Submucous Myoma. K. Fink.—p. 372.
Treatment of Obstetric Paralysis. G. Drehmann.—p. 377.
Gynecologic Hemorrhages. K. Abel.—p. 378. C'cn.
Isolated Urethral Gonorrhea in Women. F. Jacobsohn.—p. 382.
*Ileus Caused by Pregnancy. Storp.—p. 383.
Hygiene of Women. W. Liepmann.—p. 385.
Treatment of Chronic Adnexitis. T. Friedrichs.—p. 387.

Ileus Caused by Pregnancy.—Storp reviews two cases of ileus during pregnancy in which the ileus was caused by pressure of the gravid uterus on a segment of the intestine. In one case the descending colon, and in the second instance the cecum, was pressed between the promontory and the gravid uterus. The symptoms disappeared following evacuation of the uterus. The author states that such cases are relatively rare. Reports in the literature and the two cases observed by Storp indicate that ileus due to pregnancy usually occurs during the seventh month of pregnancy. Early operation is indicated because frequently the lives of mother and child are endangered.

Monatsschrift für Kinderheilkunde, Leipzig

43: 1-96 (March) 1929

Eidetic Constitution in Children. E. Liefmann.—p. 1.
*Acute Exacerbation of Latent Syphilis in Children. V. Mikulowski.—p. 21.
*Vaccine Prophylaxis and Treatment of Whooping Cough. W. Hoffmann. —p. 41.
*Uranin Test in Diagnosis of Meningitis. H. Esselbrügge.—p. 45.
Aniline Intoxication in Child. K. Ochsenius.—p. 54.
*Idiosyncrasy to Irradiated Ergosterol. K. Ochsenius.—p. 58.

Acute Exacerbation of Latent Syphilis in Children.—Mikulowski gives the case reports of two children, aged 3 and 4, in whom latent syphilis was rendered manifest by an attack of acute infectious icterus.

Vaccine Prophylaxis and Treatment of Whooping Cough. — Hoffmann reports unsatisfactory results in the prophylaxis of whooping cough with a vaccine containing 4 billion Bordet bacilli, 500 million Pfeiffer bacilli, and 100 million pneumococci per cubic centimeter. In the treatment of whooping cough, however, he obtained good results with a vaccine containing 500 million Bordet bacilli, 250 million Pfeiffer bacilli and 20 million pneumococci per cubic centimeter.

Value of Uranin Test in Diagnosis of Meningitis in Children.—Esselbrügge performed the uranin test on fifty-three children with meningitis and with other pathologic conditions and on seven healthy children. He states that the test is a useful aid in the early diagnosis of meningitis in children and that with it one can differentiate meningitis from other diseases with meningitic symptoms.

Idiosyncrasy to Irradiated Ergosterol. — Ochsenius describes the idiosyncrasy of his son, aged 8 months, to irradiated ergosterol. At the age of 5 months the infant was given 2 drops of irradiated ergosterol in milk as a prophylactic against rickets; following the ingestion of the irradiated ergosterol the infant vomited. The next day 1 drop of irradiated ergosterol was given, with the same result. Two months later the same treatment was tried but again vomiting occurred. The sensitiveness of the infant to irradiated ergosterol was so great that even the eating of a piece of zwieback containing 0.002 Gm. of irradiated ergosterol was followed by bilestained vomiting.

Münchener medizinische Wochenschrift, Munich

76: 445-486 (March 15) 1929

Etiology and Treatment of Acute Arthritis. Schottmüller.—p. 445. C'td.
Bullous Dermatitis in Bathers, Caused by Meadow Plants. H. W. Siemens.—p. 449.
*Perforated Gastric and Duodenal Ulcers. H. Bürkle-de la Camp.—p. 453.
*Acquired Hemolytic Anemia with Jaundice. A. Adler.—p. 454.
Significance of Various Cocci in Urethritis. H. Nagell.—p. 456.
Value of Term "Functional Emphysema" for Diagnosis and Prognosis of Asthma. W. Storm van Leeuwen and C. J. Storm.—p. 457. C'cn.

Perforated Gastric and Duodenal Ulcers.—Bürkle-de la Camp reviews twenty-four cases of perforated gastric and duodenal ulcers. In five cases they were walled off. The author feels that this lesion is increasing. When the ulcer is walled off, resection is the best treatment. To check the progressive peritonitis, the author advises irrigating the abdominal cavity with Ringer's solution. Speaking of surgical methods, he asserts that the Billroth I or II operation gives the best results. In some instances in which the Billroth II procedure is performed, peptic ulcers develop later. The Billroth I technic, although more complicated, gives the best permanent results.

Acquired Hemolytic Anemia with Jaundice.—Adler reports the case of a woman, aged 31, who developed icterus. She became gradually weaker and at the same time developed anemia. There was no family history of icterus. Examination of the patient revealed enlargement of the spleen and hemolysis. The author states that it is not certain that the jaundice was caused by the hemolysis. He thinks that the jaundice may also be due to the anemia, and that hemolysis and jaundice are probably caused by the same toxin. His final conclusion is that his case is not an example of acquired hemolytic jaundice, but rather of an acquired hemolytic anemia with jaundice.

Strahlentherapie, Berlin

31: 623-846 (March 2) 1929. Partial Index

*Roentgen Treatment of Lymphogranulomatosis. C. Kruchen.—p. 623.
*Radiotherapy of Cancer of Different Parts of Body. C. Regaud.—p. 671.
*Effect of Secondary Infection in Cancer of Uterus on Results of Irradiation Therapy. H. Dehler.—p. 691.
Radium Treatment of Cancer of Vulva. I. von Büben.—p. 713.
*Roentgen Treatment of Brain Tumors in Children. P. P. Gotthardt.—p. 720.
*Treatment of Malignant Tumors with Radioactive Injections. F. Tománek.—p. 735.
Technic for Use of Holfelder's Roentgen Tube. S. Simon.—p. 743.
Measurement of Gamma Rays in Absolute R Units. E. Kessler and F. Sluys.—p. 771.
*Roentgen Treatment of Pneumonia. F. Hell.—p. 786.
*Roentgen Irradiation in Diabetes Mellitus. E. Kolta.—p. 797.
*Roentgen Treatment of Ozena. S. Grauer.—p. 801.
Effect of Roentgen Irradiation on Excretion of Iodine by Organism. J. Arkussky.—p. 806.

Roentgen Treatment of Lymphogranulomatosis. — Kruchen reports good results with roentgen irradiation in fourteen cases of lymphogranulomatosis. He states that when good results are not obtained with irradiation one should consider the possibility of an involvement of the mediastinal and retroperitoneal lymph nodes or of such a complication as pleuritis or tuberculosis.

Radiotherapy of Cancer of Different Parts of Body.— On the basis of a comparative study of radiotherapy in cancer of the cervix, the mouth, the mammary gland and the rectum, Regaud points out the necessity of individualization in the irradiation of cancer in different parts of the body.

Effect of Secondary Infection in Cancer of Uterus on Results of Irradiation Treatment.—Dehler states that secondary infection in cancer of the uterus lowers the results of irradiation therapy so much that it should always be given special treatment.

Roentgen Treatment of Brain Tumors in Children.— In the roentgen treatment of nineteen cases of brain tumor in children, Gotthardt noted that very frequently all the symptoms, including the choked disk, disappeared. In three of the cases the relief of symptoms was permanent; in none of them did the irradiations retard the growth of the brain.

Treatment of Malignant Tumors with Radioactive Injections.—In the treatment of inoperable cancer, Tománek injects 1 millicurie in 1 cc. of physiologic solution semiweekly for several weeks into the margin of the tumor. In all of thirty patients thus treated the pain disappeared and the growth of the cancer was stopped for months. The author also used radioactive injections in the treatment of five cases of roentgen ulcer; in all of the cases the pain, which had been so severe that the patients could not sleep even with the aid of narcotics, disappeared, and in three of the cases the ulcer healed.

Roentgen Treatment of Pneumonia.—From his experience in the treatment of twenty-four patients with pneumonia, Hell states that roentgen irradiation does not benefit most patients with pneumonia. In patients with cardiac disturbances it may even be dangerous owing to the increased strain it puts on the heart.

Roentgen Irradiation in Diabetes Mellitus.—Kolta states that irradiation of the region of the pancreas is not followed by an improvement either in the sugar content of the blood or in the daily sugar and acetone excretion in the urine; in some of the cases the condition of the patient even becomes slightly worse for a short time following irradiation.

Roentgen Treatment of Ozena.—Grauer obtained excellent results with roentgen irradiation in three of four cases of ozena which had been treated without success by various other methods. In the three cases the fetor disappeared completely; in one of the patients who was treated by irradiation a year ago the fetor has not reappeared. Definite diminution in crust formation and in nasal secretion was also noted following roentgen treatment. The author uses two technics: In one the nasal cavity is irradiated in one field and in the other it is irradiated in three fields.

Zeitschrift für klinische Medizin, Berlin

110: 163-308 (March 12) 1929

*Lactic Acid Tolerance Test for Liver Function. K. Beckmann.—p. 163.
Intermediate Metabolism in Primary Diseases of Liver. S. Seelig.—p. 176.
*Treatment of Bronchial Asthma with Witte's Peptone. L. F. Loeb.—p. 184.
Fate of Intravenously Injected Indol and Indican. J. Olivet.—p. 195.
Hemisystolia Cordis. A. Benatt.—p. 207.
Effect of Carbon Dioxide Baths on Mineral Metabolism. W. Brednow.—p. 216.
Tryptophan Determination of Increased Globulin Content of Blood Serum. A. Fischer.—p. 224.
Erythrocyte Sedimentation Speed in Various Pathologic Conditions. A. Fischer and O. Vontz.—p. 241.
Fibrous Degeneration of Capillaries of Brain in Old Age. R. Prévôt.—p. 259.
Blood Picture of Persons Engaged in Sports. E. Schulz.—p. 282.

Technic and Results of Lactic Acid Tolerance Test for Liver Function.—Beckmann performs the lactic acid tolerance test for liver function as follows: A specimen of blood is withdrawn from the cubital vein of the patient in the morning before breakfast and after half an hour's rest. Into the cubital vein of the other arm 20 cc. of a two-tenths normal sodium lactate solution (corresponding to 0.36 Gm. of lactic acid) is injected during a period of one minute. Specimens of blood are withdrawn from the cubital vein in the other arm immediately after the injection is completed and after intervals of five and fifteen minutes. The lactic acid content of these specimens is determined by Mendel and Goldscheider's colorimetric method. If the liver is functioning normally it immediately withdraws from the blood the small amount of lactic acid introduced and the lactic acid level of the blood therefore remains unchanged. The author used this test in a large number of cases of diseases of the liver and noted that there was a definite relation between the resynthesis of the lactic acid and the degree of impairment of the liver function. The method is of value in the detection of slight disturbances in the functional condition of the liver and in the differential diagnosis between icterus caused by diseases of the liver and icterus caused by obstruction of the bile ducts. The test is so sensitive

that it frequently gives positive results at a stage in the development of the liver disease at which the other tests (excretion of galactose, excretion of urobilinogen, and the tetrachlorphenolphthalein test) still give negative results.

Treatment of Bronchial Asthma with Witte's Peptone.—In the treatment of bronchial asthma Loeb gives intramuscular injections of a 4 per cent sterile solution of Witte's peptone. From twelve to fifteen injections are given at the rate of two or three a week. He begins with 0.1 cc. and increases slowly to 1.0 cc. The injections occasionally produce considerable local reaction. This form of treatment frequently gives excellent results in patients with bronchial asthma as well as in patients sensitized to various substances.

Zentralblatt für Chirurgie, Leipzig

56: 641-704 (March 16) 1929

*Treatment of Wound After Sacral Operation for Carcinoma of Rectum. W. Denk.—p. 642.
Dislocation of Elbow: Sustained by Author: Self Reposition. K. Mermingas.—p. 644.
Treatment of New and Old Dislocations of Semilunar Bone. L. Böhler. —p. 646.
Operative Treatment of Dislocation of Semilunar Bone: Case. A. Beck. —p. 649.
Implantation of Fibula into Tibial Defect Result of Osteomyelitis. E. Bettmann.—p. 652.
Surgical Treatment of Empyema of Infants and Children. A. Fischer. —p. 656.
*Results of Operation for Fracture of Patella. K. Werwath.—p. 662.
Appendicitis or Old Tubal Abortion. R. Hubrich.—p. 665.

Treatment of Wound Following Sacral Resection of Carcinoma of Rectum.—Denk reports a mortality of 11.8 per cent among sixty-eight radical operations for carcinoma of the rectum, including thirteen abdominosacral amputations or resections. Among fifty-five sacral operations there were five deaths, a mortality of 9 per cent. Only one of these can be charged to wound infection and that was caused by one of the fixation sutures penetrating the wall of the bowel and leading to gas phlegmon. In another case a long, abnormal cerebrospinal canal containing elongated spinal cord membranes became infected by a penetrating needle which had previously passed through the wall of the bowel. Death was caused by an ascending meningitis. The author ascribes the extraordinary absence of wound infection in his experience to the fact that he always leaves the wound wide open and uses comparatively few sutures, and these only to fix the bowel to the skin. Then the wound is well packed—but loosely—with iodoform gauze. This gauze is irrigated every day with a hydrogen peroxide solution. By the eighth or tenth day the gauze has loosened itself sufficiently to be replaced with a fresh packing. Complete wound healing usually occurs in about six weeks.

Results of Treatment of Fractured Patella.—Forty-five cases are analyzed by Werwath. Sixteen of these were treated conservatively, twenty-nine by operation, that is, by some form of suture, catgut, steel wire or aluminum bronze wire. Of the operative cases, an ideal result was reported in sixteen. Of the cases treated conservatively, such a result was reported in only one. Only one of the operative cases showed a negative result. This was a case in which the fragments were encircled by aluminum bronze wire. A second operation in which steel wire was used, with restoration of the soft parts with fascia lata, failed to give a satisfactory result. Eight of the patients operated on could not be reached for a final report. Therefore, an ideal result was reported by 75 per cent of twenty-one patients examined. The author prefers the steel wire suture to the aluminum bronze wire or catgut sutures, except in certain cases. The important factors leading to good results are careful suture of all the soft parts; exact approximation of the fragments; avoiding the joint cartilage when suturing; closure of the wound without drainage, and never permitting the hand or fingers to come in contact with any part of the field of operation.

Medico-Biologichesky Jurnal, Moscow

4: 1-101, 1928

Diagnostic Value of Ohm's Photophlebography in Functional Disturbances of Heart. M. S. Vovsi.—p. 1.
Influence of Thyroid Gland on Higher Mental Centers in Dogs. B. M. Zavadovsky and A. L. Zak.—p. 15.
*Rôle of Corpus Striatum and Medulla Oblongata in Regulation of Blood Ferments. V. S. Drapkin.—p. 46.
Effect of Ergotamine on Salivation. I. G. Dmitriev and G. Ya. Hvoles. —p. 54.
Development of Sensory "Dominant" of Spinal Cord. M. Vinogradov and G. Konradi.—p. 63.
*Effect of Anesthesia on Nitrogen Content of Brain. A. Ya. Revo.—p. 76.
Physiology and Pathology of Capillaries. I. B. Kabakov.—p. 85.

Rôle of Corpus Striatum and Medulla Oblongata in Regulation of Blood Ferments.—Drapkin did not find any change in the amount of the amylase and the peroxidase in the blood serum of rabbits in which Bernard's puncture of the floor of the fourth ventricle or extirpation of the corpus striatum was performed. The same results were observed at the determination of the same ferments in the blood serum of thirty-seven patients with various diseases involving the corpus striatum and the other central gray nuclei. Therefore, the author thinks that the corpus striatum and the gray nuclei in the medulla oblongata have no influence on the regulation of the ferment content in the blood serum.

Effect of Anesthesia on Nitrogen Content of Brain.—Revo found an increased amount of nitrogen in both the gray and the white substance of the brains of dogs that were killed by exsanguination after the administration of morphine-chloroform for from twenty minutes to two hours.

Hospitalstidende, Copenhagen

72: 1-28 (Jan. 3) 1929

Remarks on Essential Aplastic Anemia. S. A. Holbøll.—p. 1.
*Diverticula in Duodenum. J. Juul.—p. 12.
Case of Hereditary Adolescent Ossification (O. Thomsen). A. Hofman-Bang.—p. 24.

Diverticula in Duodenum.—Juul reviews the etiology and pathogenesis of duodenal diverticula and cites from the literature cases of grave complications due to diverticula in the duodenum. In view of their relative frequency the diverticula seem as a rule to cause no symptoms. With roentgen diagnosis of duodenal diverticula, and symptoms suggesting disorders of the biliary tract, chronic pancreatitis or duodenal ulcer without other known cause, the diverticula should not too readily be rejected as possible cause of the disturbance. The extent to which operative intervention is indicated will depend on the nature and intensity of the symptoms. Diagnosis of diverticula in the duodenum is possible only by roentgen examination. Four recent cases are reported.

72: 29-54 (Jan. 10) 1929

*Examinations of Prostatic Secretion and Clinical Significance. V. Riemke. —p. 29.
Paroxysmal Myoplegia (Periodic, Familial). A. V. Neel.—p. 48. Cont'd.

Examinations of Prostatic Secretion and Clinical Significance.—Riemke describes the technic of expressing prostatic secretion and methods of fixation and staining. Examinations were made in ninety cases. The normal prostatic secretion was found usually to contain many or masses of corpuscula, with few leukocytes and monocytes, few epithelial cells, and, as a rule, no bacteria. The presence of more than a few leukocytes and monocytes and more abundant epithelial cells must be regarded as pathologic. Decrease in the number of corpuscula supports the diagnosis of prostatitis. The author is inclined to believe that the presence of many leukocytes and bacteria, intracellular or extracellular, points to an infectious prostatitis, even in the absence of marked subjective and objective symptoms of prostatic disease. His results indicate that prostatic secretion can be obtained from all male patients without especial difficulty, and he does not consider examination of the prostate complete without examination of the prostatic secretion.

Ugeskrift for Læger, Copenhagen

91: 191-210 (March 7) 1929

Treatment of Chronic Urticaria. S. A. Holbøll.—p. 195.
*Changeability of Blood Types. O. Thomsen.—p. 196.

Question of Changeability of Blood Types.—Thomsen states that in the two cases of alleged change of blood type reported by E. Bahl (*München. med. Wchnschr.* **76:**152 [Jan. 25] 1929) there is not the slightest proof of change of type, the examinations having been incomplete.